

Nancy M. Holincheck

Curriculum Vitae

George Mason University, College of Education & Human Development,
School of Education, 4400 University Drive, MSN 1E8, Fairfax, VA 22030
Office: (703)-993-8136 nholinch@gmu.edu

EDUCATION

- Ph.D. Education - 2012
Curriculum & Instruction, Research Methods
George Mason University, Fairfax, Virginia
Chair: Gary Galluzzo
- M.S. Applied & Engineering Physics - 2003
George Mason University, Fairfax, Virginia, 2003
- B.S. Physics, Math - 1997
The College of William & Mary, Williamsburg, Virginia

PROFESSIONAL APPOINTMENTS

- 2025-present **George Mason University**
Associate Professor of STEM Education
Advanced Studies in Teaching and Learning
College of Education & Human Development, Fairfax, Virginia
- 2019-2025 **George Mason University**
Tenure-track Assistant Professor of STEM Education
Advanced Studies in Teaching and Learning
College of Education & Human Development, Fairfax, Virginia
- 2013-2019 **George Mason University**
Term Assistant Professor of Education
Advanced Studies in Teaching and Learning
College of Education & Human Development, Fairfax, Virginia
- 2012-2013 **American University**
Professorial Lecturer (Full-time term faculty)
School of Education, Teaching, and Health, Washington, D.C.

PROFESSIONAL HONORS AND LEADERSHIP

Associate Director of K-12 Quantum Education

Quantum Science and Engineering Center
George Mason University: 2022 - present

Academic Program Coordinator

Advanced Studies in Teaching and Learning, 2024-present

Co-Academic Program Coordinator

Advanced Studies in Teaching and Learning, 2018-2024

Assistant Director

Center for Social Equity through Science Education
George Mason University: 2017-present

Secretary/Treasurer

AERA SIG Problem-Based and Project-Based Learning: 2022-2024

Teaching Excellence Award Nominee

George Mason University: 2019, 2025

National Board for Professional Teaching Standards Certification

Adolescents & Young Adults Science
Initial certification: 2001-2011, Renewed certification: 2011-2021

K-12 TEACHING

2008- 2012 **Chantilly High School**, Physics Teacher
Fairfax County Public Schools, Chantilly, Virginia

1997-2001 **Hayfield Secondary School**, Physics Teacher
Fairfax County Public Schools, Alexandria, Virginia

PUBLICATIONS AND OTHER SCHOLARLY PRODUCTS

*=*Graduate student collaborator*

Refereed Journal Articles

Holincheck, N., & Galanti, T. (2026). STEM teacher identity and agency: A cross-case analysis of four teachers' actions for equity in STEM. *Journal for STEM Education Research*, 9(1), 85–107.
<https://doi.org/10.1007/s41979-025-00163-2>

Dreyfus, B. W., Rosenberg, J. L., & **Holincheck, N. M.** (Accepted). *Quantum Chutes and Ladders: A quantum tabletop board game*. *The Physics Teacher*.

Barnes, E., Bennet, M. B., Boltasseva, A., Borish, V., Brown, B., Carr, L., Easton, E. W., Economou, S. E., Edwards, E. E., Finkelstein, N. D., Fracchiolla, C., Freericks, J. K., Goss, V., Hannum, M., **Holincheck, N.**, Kelly, A. M., Lewandowski, H. J., Matsler, K. J., Mercurio, E., Montaña, I., Murdock, M., Perron, J. K., Richardson, C. J. K., Ross, R. S., Ryu, M., Searles, T. A., Singh, C., Tingle, A., Zwickl, B. M. (2025). Outcomes from a Workshop on a National Center for Quantum Education. *EPJ Quantum Technology: Collection on Quantum Education*, 12, Article 40. <https://epjquantumtechnology.springeropen.com/articles/10.1140/epjqt/s40507-025-00343-4>

Galanti, T. M. & **Holincheck, N.** (2025). Dominant discourses about what it means to be “good” at mathematics: How high-achieving young women negotiate tensions within their evolving STEM identities. *Education Sciences*, 15(1), Article 92. <https://doi.org/10.3390/educsci15010092>

Holincheck, N., Bergeron, L., & *Butler, T. N. (2024). Introduction to a special issue: Designing for equity within problem-based and project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, 17(1). <https://doi.org/10.14434/ijpbl.v18i1.40819>

Holincheck, N., Galanti, T. M., & *Butler, T. N. (2024). Promoting teachers’ advocacy and agency for equity in STEM education through research and reflection. *Journal of Research in Science Teaching*, 61(10), 2468–2495. <https://doi.org/10.1002/tea.21970>

Janis, M., & **Holincheck, N.** (2024). Layering identities as artist and theatre educator: Reflecting beyond experiences. *Teachers and Teaching*, 31(7), 1164-1179. <https://doi.org/10.1080/13540602.2024.2349023>

Rosenberg, J., **Holincheck, N.** & *Colandene, M. (2024). STEM undergraduates' knowledge and interest in quantum: Barriers and opportunities to building a diverse quantum workforce. *Physical Review: Physics Education Research*, 20, Article 010138. <https://doi.org/10.1103/PhysRevPhysEducRes.20.010138>

Marttinen, R., Banville, D., **Holincheck, N.**, *Ferrer, V., Stehle, S. (2024). Learning to integrate STEM into physical education through asynchronous professional development modules. *Journal of Teaching in Physical Education*. Advance Online Publication. <https://doi.org/10.1123/jtpe.2023-0137>

Holincheck, N., *Kraft, T., Galanti, T., Baker, C., & Nelson, J. (2024). “Everybody was included in the conversation”: Teachers’ perceptions of student engagement as a path to transdisciplinary STEM learning in diverse elementary schools. *Education Sciences*, 14(3), Article 242. <https://doi.org/10.3390/educsci14030242>

Galanti, T. M., & **Holincheck, N.** (2024). Developing integrated STEM teacher identity using guided curation of K-12 engineering activities. *Research in Integrated STEM Education*, 2, 31-55. <https://doi.org/10.1163/27726673-bja00010>

Galanti, T. M., & **Holincheck, N.** (2024). Integrating computational thinking in elementary STEM using the engineering design process. *School Science & Mathematics*, 124(4), 279-286. <http://doi.org/10.1111/ssm.12638>

Holincheck, N., Rosenberg, J. L., *Zhang, X. L., *Butler, T. N., *Colandene, M., Dreyfus, B. W. (2024). Quantum science and technologies in K-12: Supporting teachers to integrate quantum in STEM classrooms. *Education Sciences*, 14(3), Article 219. <https://doi.org/10.3390/educsci14030219>

Rosenberg, J. L., **Holincheck, N.**, *Fernandez, K., Dreyfus, B.W., *Wardere, F., Stehle, S., *Butler, T. (2024). The role of mentorship, career conceptualization, and leadership in developing women's physics identity. *Physical Review: Physics Education Research*, 20, Article 010114. <https://doi.org/10.1103/PhysRevPhysEducRes.20.010114>

Holincheck, N., & Galanti, T. M. (2023). Applying a model of integrated STEM teacher identity to understand change in elementary teachers' STEM self-efficacy and career awareness. *School Science & Mathematics*, 123(6), 234–248. <http://doi.org/10.1111/ssm.12610>

Galanti, T. M., & **Holincheck, N.** (2022). Beyond content and curriculum in elementary classrooms: Conceptualizing the cultivation of integrated STEM teacher identity. *International Journal of STEM Education*, 9, Article 10. <https://doi.org/10.1186/s40594-022-00358-8>

Holincheck, N., & Galanti, T. M. (2022). Are you a STEM teacher?: Exploring K-12 teachers' conceptions of STEM education. *Journal of STEM Education: Innovations and Research*, 23(2). <https://jstem.org/jstem/index.php/JSTEM/article/view/2551>

Holincheck, N., Galanti, T. M., & Trefil, J. (2022). Assessing the development of digital scientific literacy with a computational evidence-based reasoning tool. *Journal of Educational Computing Research*, 60(7), 1796-1817. <https://doi.org/10.1177/07356331221081484>

Baker, C., Galanti, T., *Kraft, T., **Holincheck, N.**, Hjalmarson, M., & Nelson, J. (2022). Researchers as Coaches: Developing Mathematics Teaching Capacity Using MEAs for STEM Integration. *Investigations in Mathematics Learning*, 14(1), 28-48. <https://doi.org/10.1080/19477503.2021.2023966>

Dodman, S. L., **Holincheck, N.**, & *Brusseau, R. (2021). Using text via dialectical journals to nurture liminal spaces in teacher education. *Journal of Transformative Education*, 20(4), 325-343. <https://doi.org/10.1177/15413446211058139>

Fox, R. K., Dodman, S., & **Holincheck, N.** (2019). Moving beyond reflection in a hall of mirrors: Developing critical reflective capacity in teachers and teacher educators. *Reflective Practice*, 20(3), 367-382. <http://dx.doi.org/10.1080/14623943.2019.1617124>

Refereed Conference Proceedings

Akesson, L., Rosenberg, J. L., **Holincheck, N.**, & Dreyfus, B. (2025). Physics identity: Examining the role of recognition for undergraduate women in physics. In *2025 Physics Education Research Conference Proceedings*. <https://www.per-central.org/items/perc/6040.pdf>

Simons, J. R., **Holincheck, N.**, & Rosenberg, J. L. (2025). Pathways to quantum: Fostering high school student interest in quantum information science. In *Proceedings of the 2025 IEEE International Conference on Quantum Computing & Engineering, Quantum Science and Engineering and Education Conference*. <https://arxiv.org/abs/2508.03838>

Rosenberg, J. L., & **Holincheck, N.** (2025). Building student understanding of quantum information science and engineering through projects on applications to medical technologies. In *Proceedings of the 2025 IEEE International Conference on Quantum Computing & Engineering, Quantum Science and Engineering and Education Conference*. <https://arxiv.org/abs/2508.03850>

*Zhang, X., **Holincheck, N.**, Rosenberg, J. L., Dodman, S., Dreyfus, B., & *Simons, J. (2024). Why teach quantum: Elementary teachers' initial beliefs about quantum. In *Proceedings of IEEE International Conference on Quantum Computing & Engineering (QCE24), Quantum Science and Engineering and Education Conference (QSEEC)*. <https://ieeexplore.ieee.org/document/10821202>

Rosenberg, J. L., & **Holincheck, N.** (2024). Quantum awareness for post-secondary students. In *Proceedings of IEEE International Conference on Quantum Computing & Engineering, Quantum Science and Engineering and Education Conference*. <https://ieeexplore.ieee.org/document/10821018>

Sprague, D., Marttinen, R., Eagle, M., **Holincheck, N.**, *Mehdi, T., *Kwende, M. & Riggio, A. (2020). Physical STEM+C: Supporting the Integration of K-12 STEM+C Concepts in Non-Traditional Subject Areas. In D. Schmidt-Crawford (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 112-114). Online: Association for the Advancement of Computing in Education (AACE). <https://www.learntechlib.org/primary/p/215738/>

Boicu, M., Tecuci, G., Marcu, D., Trefil, J., & **Holincheck, N.** (2016). Inquiry-Based Teaching and Learning of Science with Cognitive Assistants. In *2016 AAAI Fall Symposium Series*. <https://www.aaai.org/ocs/index.php/FSS/FSS16/paper/download/14116/13678>

Book chapters

Douglas, K., **Holincheck, N.**, Neumann, K., & Hartman, N. (In press). STEM Education in Support of Workforce Development. In C. C. Johnson, M. Mohr-Schroeder, T. Moore, & L. English (Eds.), *Handbook of research on STEM education, 2nd edition*. Routledge.

Hjalmarson, M., **Holincheck, N.**, Baker, C. K., & Galanti, T. M. (2020). Learning models and modeling across the STEM disciplines. In C. C. Johnson, M. Mohr-Schroeder, T. Moore, & L. English (Eds.), *Handbook of research on STEM education* (pp. 223-233). Routledge.

Dodman, S. L., **Holincheck, N.**, *Safran, M., & *Tardif-Kitchen, T. (In press). Valuing teachers as intellectuals in the development of school-based teacher educators. In B. Butler & L. Mullen (Eds.), *How teacher educators learn: profiles in school-based teacher educator preparation*. Information Age Publishing.

Non-Refereed Journal Articles

Dodman, S. L., **Holincheck, N.**, & Fox, R. K. (2022). How a cultural lens can help teachers disrupt inequity. *The Learning Professional*, 43(1), 58-62.

<https://learningforward.org/wp-content/uploads/2022/01/how-a-cultural-lens-can-help-teachers-disrupt-inequity.pdf>

Holincheck, N. (2013). Review of *STEM the tide: Reforming science, technology, engineering and math education in America* by David. E. Drew. Baltimore, MD: Johns Hopkins University Press, 2011. *Education Review*, 16. <http://www.edrev.info/reviews/rev1206.pdf>

Research Reports

Peters-Burton, E. E., & **Holincheck, N.** (2022). School Blueprint: New Tech Academy at Wayne High School. New Tech Network, Napa, CA.

Peters-Burton, E. E., & **Holincheck, N.** (2020). Interdisciplinary curriculum and integrated instruction: A literature review. New Tech Network, Napa, CA.

Holincheck, N., Horak, A., & Shaklee, B. (2019). Project ExCEL: Experiences Cultivating Exceptional Learning Final Evaluation Report. Final full research report for funded project, Project ExCEL.

Funded Grants & Sponsored Research

N. Holincheck (PI), J. Rosenberg, & B. Dreyfus. *Quantum in the Middle: Quantum Progressions from Elementary to High School*. National Science Foundation, Discovery Research PreK-12 (DRK-12). \$449,785. 2025-2028. Funded September 2025.

Ahn, E.; Nelson, J.; Rosenberg, J. R., & Peixoto, N. *Pivots: Reshaping Education in Nanofabrication for the Northern Virginia Ecosystem and Workforce (RENEW)*. National Science Foundation, Experiential Learning for Emerging and Novel Technologies (ExLENT). \$999,742. 2025-2028. Funded October 2025. With **N. Holincheck (External Evaluator)**.

J. Rosenberg, P. Danquah-Brobby, **N. Holincheck (co-PI)**, & J. Nelson. *George Mason University Quantum Education Research Postdoctoral Fellowship*. National Science Foundation, Science, Technology, Engineering, and Mathematics Education Organizational Postdoctoral Research Fellowships (STEM Ed OPRF). \$1,246,608. Funded August 2024. Terminated by NSF May 2025.

N. Holincheck (PI), J. Rosenberg, S. Dodman, & B. Dreyfus. *EAGER: Quantum is Elementary: Quantum Teaching and Learning in Elementary Classrooms*. National Science Foundation, Discovery Research K12 (DRK-12). \$299,852. 2023-2026. Funded July 2023.

J. Rosenberg, **N. Holincheck (co-PI)**, & B. Dreyfus. *Building the Quantum Pipeline*. U.S. Department of Education, Institute of Educational Sciences, Congressional Earmark Funding. \$650,000. 2022-2026. Funded August 2022.

J. Rosenberg, **N. Holincheck (co-PI)**, & B. Dreyfus. *Cultivating Physics Identity and Belonging for Women in Physics: Mentorship and Leadership Development through the Pion Program*. National Science Foundation, Investigating Undergraduate Science Education (IUSE). \$299,898, 2021-2024. Funded August 2021.

E. Peters-Burton & **N. Holincheck (co-PI)**. *Integrated courses crosswalk: A case study, literature review, and deep dive into the implementation and impact of integrated courses in New Tech Network schools*. New Tech Network \$59,869. 2019-2022. Funded July 2019.

R. Fox & A. Evmenova. (co-PIs). (2019). *Russia-US Teachers (R-UST) for STEM Education: Building Teacher Knowledge and Leadership Through International Learning*. US Russia Foundation. With **N. Holincheck**, Project Evaluator and Faculty; W. Frazier, Faculty. Amount \$330,190. 2019-2021. Funded August 2019.

G. Tecuci, M. Boicu, D. Marcu, & **N. Holincheck (co-PI)**. *Cogent Argumentation System with Crowd Elicitation (Co-Arg)*. IARPA, Crowdsourcing Evidence, Argumentation, Thinking and Evaluation (CREATE) Program. \$2,631,465. 2017-2018. Funded January 2017.

G. Tecuci, J. Trefil, M. Boicu, D. Marcu, & **N. Holincheck (co-PI)**. *Teaching Critical Thinking Skills in Science with sInvestigator*. Improving Undergraduate STEM Education: Education and Human Resources (IUSE EHR), National Science Foundation, NSF #1611742. \$299,999. 2016-2020. Funded Fall 2016.

N. Holincheck (PI). *Science Academy for Improving Learning in Science (SAILS)*. Math and Science Partnership Mini-grant, Virginia Department of Education, funded with Alexandria City Public Schools, \$13,929. 2015-2016. Funded Fall 2015.

B. Shaklee. *Project ExCEL*. U.S. Department of Education, Institute of Educational Sciences, Jacob Javits Gifted and Talented Education. Five Year Amount = \$2,461,229. 2014-2019. Funded Fall 2014. With **N. Holincheck** (Project Evaluator).

Internal Funds Awarded

S. Dodman, **N. Holincheck (co-PI)**, & R. Fox. *(Re)Developing the Practicing Teacher M.Ed. for the Induction Career Stage*. GMU CEHD Academic Program Innovations Grant. \$9662. Funded Fall 2022.

D. Banville, R. Marttinen, & **N. Holincheck (co-PI)**. *Supporting STEM education in K-12 schools through physical education*. Provost's Summer Team Impact Grant. \$47,500. Funded Spring 2021.

C. Baker, M. Hjalmarson, **N. Holincheck (co-PI)**, & J. Nelson. *Model-Eliciting Activity Design Considerations to Achieve STEM Integration*. GMU CEHD Seed Grant. \$4240. Funded Spring 2019.

R. Marttinen, D. Sprague, M. Eagle, **N. Holincheck (co-PI)**. *Physical STEM+C: Supporting the Integration of K-12 STEM+C concepts in non-traditional subject areas*. GMU CEHD Seed Grant. \$9500. Funded Spring 2019.

N. Holincheck (PI), F. Shahroki, R. Biggs, S. Dodman, & R. Fox (2019). *ASTL-Ed Leadership IB Leadership Certificate*. GMU CEHD Curriculum Innovations Grant. \$10,000. Funded Spring 2019.

J. Nelson, **N. Holincheck (co-PI)**, J. Rosenberg, M. Hjalmarson, L. Lukes, J. Lester, A. Johri, R. Jones, R. Fox. *Graduate Programs in Computing, Engineering, and Science Education*. Provost's Curriculum Impact Grant. Funded Summer 2018.

C. Baker, M. Hjalmarson, **N. Holincheck (co-PI)**, J. Nelson. *Model-Eliciting Activity Design Considerations to Achieve STEM Integration*. CEHD Seed Grant. \$8392. Funded Spring 2018.

S. Dodman, **N. Holincheck**, and R. Fox. *Interdisciplinary Innovations in ASTL*. \$5000. Funded Spring 2018.

N. Holincheck. Online learning/Distance education course grant. American University. \$3000 – Funded Spring 2013.

Refereed Presentations

* = Graduate student, ** = Undergraduate student, *** = High school student, ^T=Teacher

Holincheck, N., Dodman, S., Cameron, C., & Simons, J. (2026, February 8-11). *Reflecting to lead: How critical reflection supports teachers' advocacy and agency.* Paper presentation at 2026 Association of Teacher Educators (ATE) Annual Meeting, Arlington, Virginia.

Holincheck, N., Simons, J. R., Lipman, J. L., Dodman, S. L., Rosenberg, J. L., Dreyfus, B. W., Akesson, L., Zhang, X. (2026, April 19-22). *Elementary teachers' and students' perceptions of quantum and its relevance in elementary school.* Paper presentation at 2026 National Association of Research in Science Teaching (NARST) Annual Meeting, Seattle, Washington.

Rosenberg, J., & **Holincheck, N.** (2025, August 2-6). *The Impact of the Pathways to Quantum Immersion Program and College Trajectories and Career Conceptualization.* Presentation at the American Association of Physics Teachers (AAPT) Washington, D.C.

*Fontaine, J., & **Holincheck, N.** (2025, April 23-27). *Using General Systems Theory to Understand Universities' Adoption of Financial Innovation.* Paper presentation at 2025 American Educational Research Association (AERA) Annual Meeting, Denver, Colorado, USA.

Holincheck, N., Rosenberg, J., ^TOwens, E., ^TGermain, E., ^THarvey, B., & ^THannum, M. (2025, April 5). *Designing a K-12 Course in Quantum Information Science.* Presentation at the Spring 2025 Chesapeake Section of the American Association of Physics Teachers (CSAAPT). Fairfax, Virginia.

Rosenberg, J., & **Holincheck, N.** (2025, April 5). *Quantum Resources for K-16.* Presentation at the Spring 2025 Chesapeake Section of the American Association of Physics Teachers (CSAAPT). Fairfax, Virginia.

*Akesson, L.M., *Lipman, J., Rosenberg, J. R., **Holincheck, N.,** & Dreyfus, B. W., Velasquez, R. Q. (2025, April 5). *Building Physics Identity and Belonging for Women: Re-thinking the Teaching and Learning Environment in Physics.* Presentation at the Spring 2025 Chesapeake Section of the American Association of Physics Teachers (CSAAPT). Fairfax, Virginia.

Holincheck, N., *Simons, J., Dodman, S., *Zhang, X., Rosenberg, J. L., Dreyfus, B. W., & *Lipman, J. (2025, March 23-26). *Strengthening Elementary STEM Teacher Identity through Quantum Content and Curriculum.* Paper presentation at 2025 National Association of Research in Science Teaching (NARST) Annual Meeting, Washington, D.C.

Galanti, T., **Holincheck, N.**, & ^TButler, T. N. (2025, March 23-26). *The Role of Socialized Assumptions in Shaping Identities of Women in Mathematically Intensive STEM Majors*. Paper presentation at 2025 National Association of Research in Science Teaching (NARST) Annual Meeting, Washington, D.C.

*Akesson, L., Rosenberg, J. L., **Holincheck, N.**, Dreyfus, B. W., ^TQuiroga-Velasquez, R., & *Lipman, J. (2025, March 23-26). *Empowering Women in Physics: Exploring How Leadership, Mentorship, and Career Conceptualization Shape Undergraduates' Physics Identity*. Paper presentation at 2025 National Association of Research in Science Teaching (NARST) Annual Meeting, Washington, D.C.

*Simons, J., ^TButler-Hall, M., ^THamblen, C., ^TMoore, M. A., ^TCarter, C., **Holincheck, N.**, Dodman, S., Rosenberg, J. L., Dreyfus, B. W., & *Zhang, X. (2025, March 23-26). *Bridging the Gap: Using Literacy to Teach Quantum Concepts in Elementary Education*. Poster presentation at 2025 National Association of Research in Science Teaching (NARST) Annual Meeting, Washington, D.C.

Rosenberg, J. L., **Holincheck, N.**, Dreyfus, B. W., Zhang, X., Kenowe, G., Ibrahim, I., & D'Cruze, N. (2025, March 23-26). *The Pathways to Quantum Immersion Program*. Poster presentation at 2025 National Association of Research in Science Teaching (NARST) Annual Meeting, Washington, D.C.

Holincheck, N. (2025, March 23-26). *EAGER: Quantum is Elementary: Quantum Teaching and Learning in Elementary Classrooms*. In *A showcase of research In Praise of Science Teachers funded by the US National Science Foundation: Roundtable discussions with NARST researchers about their NSF-funded projects that include teachers as essential partners in the work*. Roundtable presentation at 2025 National Association of Research in Science Teaching (NARST) Annual Meeting, Washington, D.C.

Holincheck, N., & Galanti, T. (2024, November 7-9). *Who is STEM for?: Shifts in Elementary Teachers' Assumptions about STEM and Students*. Paper presentation at 2024 School Science and Mathematics Conference, Knoxville, Tennessee.

Holincheck, N., Dodman, S., Rosenberg, J., *Zhang, X., Dreyfus, B., *Simons, J., & *Butler, T. (2024, November 7-9). *Quantum is Elementary: Designing for Complex Reasoning in Elementary STEM*. Paper presentation at 2024 School Science and Mathematics Association Conference, Knoxville, Tennessee.

*Akesson, L., Rosenberg, J., **Holincheck, N.**, & Dreyfus, B. (2024, October 19). *Physics Identity of Undergraduate Women*. Presentation at the Fall 2024 Chesapeake and North Carolina Sections of the American Association of Physics Teachers Joint meeting. Newport News, Virginia.

*Thapa Magar, N., Rosenberg, J., Nelson, J., & **Holincheck, N.** (2024, October 19). *Cultural Backgrounds and Classroom Dynamics: Understanding the Impact of Cultural Background on International Graduate Teaching Assistants' Adjustment to U.S. Graduate Teaching*. Presentation at the Fall 2024 Chesapeake and North Carolina Sections of the American Association of Physics Teachers Joint meeting. Newport News, Virginia.

Rosenberg, J., **Holincheck, N.**, & Dreyfus, B. (2024, October 19). *Quantum Concepts for High School and College*. Presentation at the Fall 2024 Chesapeake and North Carolina Sections of the American Association of Physics Teachers Joint meeting. Newport News, Virginia.

Rosenberg, J., & **Holincheck, N.** (2024, September 15-16). *Quantum awareness for post-secondary students*. Paper presentation at 2024 IEEE Quantum Science and Engineering Education Conference (QSEEC24). Montreal, Quebec, Canada.

*Zhang, X., **Holincheck, N.**, Rosenberg, J., Dodman, S., Dreyfus, B.W., & *Simons, J. (2024, September 15-16). *Why teach quantum: Elementary teachers initial beliefs about quantum*. Paper presentation at 2024 IEEE Quantum Science and Engineering Education Conference (QSEEC24). Montreal, Quebec, Canada.

Rosenberg, J. L., Holincheck, N., Dreyfus, B. W., & Zhang, X. (2024, July 10-11). *Building student interest in quantum careers: The Pathways to Quantum Immersion Program*. Poster presented at the Physics Education Research Conference, Boston, Massachusetts.

Dreyfus, B. W., **Holincheck, N.**, Rosenberg, J. L. (2024, July 10-11). *Students' development of quantum concepts through a quantum board game*. Poster presented at the Physics Education Research Conference, Boston, Massachusetts.

*Akesson, L., Rosenberg, J., **Holincheck, N.**, Dreyfus, B. (2024, July 6-10). *Examining the role of family in women's engagement and success in physics*. Presentation at the American Association of Physics Teachers (AAPT) Boston, Massachusetts.

*Quiroga-Velasquez, R., **Holincheck, N.**, Rosenberg, J., Dreyfus, B., & *Akesson, L. (2024, April 11-14). *Undergraduate women's physics identity: Importance of leadership and mentorship*. Paper presentation at 2024 American Educational Research Association (AERA) Annual Meeting, Philadelphia, Pennsylvania, USA.

Dodman, S. L., *Hiltabidel, J., & **Holincheck, N.** (2024, April 11-14). *Decolonizing the online space: Teachers' engagement in dialogue groups to foster critical reflection*. Paper presentation at 2024 American Educational Research Association (AERA) Annual Meeting, Philadelphia, Pennsylvania, USA.

Dodman, S. L., **Holincheck, N.**, & *Wells-Williams, S. (2024, April 11-14). *New teacher needs and induction supports: Is there space for graduate coursework?* Poster presentation at 2024 American Educational Research Association (AERA) Annual Meeting, Philadelphia, Pennsylvania, USA.

*Akesson, L., Rosenberg, J., **Holincheck, N.**, Dreyfus, B. (2024, March 16). *Examining the role of family in women's engagement and success in physics.* Presentation at the 2024 Chesapeake Section of the American Association of Physics Teachers (CSAAPT) Semi-annual meeting, Dover, DE.

Holincheck, N., *Butler, T. N. , Colandene, M., Rosenberg, J., Dreyfus, B., **Mitchell, A., & **Russell, M. (2024, March 17-20). *Supporting teacher learning for K-12 quantum teaching & learning.* Paper presentation at 2024 National Association of Research in Science Teaching (NARST) Annual Meeting, Denver, Colorado, USA.

Holincheck, N., Galanti, T., & *Butler, T. (2023, Oct 18-21). *Promoting teachers' advocacy and agency for equity in STEM education through research and reflection.* Paper presentation at 2023 School Science and Mathematics Conference, Colorado Springs, Colorado.

Holincheck, N., Rosenberg, J., Colandene, M., & J., Dreyfus, B. (2023, September 17-18). *Developing the quantum pipeline with K-12 teachers.* Paper presented at the 2023 IEEE Quantum Science and Engineering Education Conference (QSEEC23), Bellevue, Washington, USA.

Rosenberg, J., **Holincheck, N.**, Colandene, M., & J., Dreyfus, B. (2023, September 17-18). *Undergraduate student knowledge and interest in quantum.* Paper presented at the 2023 IEEE Quantum Science and Engineering Education Conference (QSEEC23), Bellevue, Washington, USA.

Martinen, R., Banville, D., **Holincheck, N.**, *Ferrer, VJ, & Stehle, S. (2023, July 4-7). *Learning to integrate STEM into physical education through asynchronous professional development modules.* 2023 AIESEP Conference, Santiago, Chile.

Galanti, T. & **Holincheck, N.** (2023, April 13-16). *Developing Integrated STEM Teacher Identity using guided curation of K-12 engineering activities* at the 2023 American Educational Research Association (AERA) Annual meeting, Chicago, Illinois, USA.

Holincheck, N., *Butler, T., Janis, M., *Brusseu, R., & **Yosufzai, S. (2023, April 13-16). *Watering the seeds of women's STEM identity: Examining STEM capital of computing and engineering majors* at the 2023 American Educational Research Association (AERA) Annual meeting, Chicago, Illinois, USA.

Holincheck, N., Rosenberg, J., Dreyfus, B., ***Cheeran, E. S., *Butler, T., & *Colandene, M. (2023, April 13-16). *"I used to think quantum is too complex": Elementary teachers curation of*

quantum curriculum at the 2023 American Educational Research Association (AERA) Annual meeting, Chicago, Illinois, USA.

Janis, M. & **Holincheck, N.** (2023, April 13-16). *Layering identities as artist and theatre educator: Reflecting beyond experiences* at the 2023 American Educational Research Association (AERA) Annual meeting, Chicago, Illinois, USA.

Dodman, S. & **Holincheck, N.** (2023, March 26-29). *Moving from awkward to meaningful online: Utilizing dialogue groups in lieu of standard discussion boards* at the 2023 Association of Teacher Educators (ATE) Annual Meeting, Jacksonville, Florida.

Holincheck, N., & Galanti, T. (2022, April 21-26). *Building an integrated STEM teacher identity: Concept maps as formative assessments of initial STEM conceptualizations* at the 2022 American Educational Research Association (AERA) Annual meeting, San Diego, California, USA.

Rosenberg, J., **Holincheck, N.**, & Vora, P. (2022, March 14-18). *Building a Quantum Pipeline*. Bulletin of the American Physical Society. APS March Meeting. Chicago, Illinois.

Dodman, S., **Holincheck, N.**, & *Brusseau, R. (2021, April 8-12). *Using an online dialectical journal as a space for critical reflective representation and development* at the 2021 American Educational Research Association (AERA) Annual Meeting, Orlando, Florida, USA (Virtual Conference).

Fox, R. K., **Holincheck, N.**, Dodman, S. L., *Stehle, S. M. & *Brusseau, R. L. (2020, Apr 17 - 21) *Understanding experienced teachers' learning through reflections and portfolio data: results of longitudinal programmatic research* [Symposium]. AERA Annual Meeting San Francisco, California, USA. <http://tinyurl.com/v5c8lva> (Conference Canceled).

Fox, R., & **Holincheck, N.** (2019, October 18-20). *Understanding the role of language and culture through teacher research in international settings: Teachers' perceptions and actions*. Research presentation accepted for the Alliance for International Education. International School of Geneva, Geneva, Switzerland.

Holincheck, N., *Galanti, T., Trefil, J., Tecuci, G., Boicu, M., & Marcu, D. (2019, April 5-9). *Developing computational thinking in scientific inquiry: Use of sInvestigator in problem solving* at the 2019 American Educational Research Association (AERA) Annual Meeting, Toronto, Ontario.

Fox, R., **Holincheck, N.**, Dodman, S., & *Webb, K. (2019, April 5-9). *Critical reflection and diversity: Prospective and in-service teacher learning to teach diverse students* at the 2019 American Educational Research Association (AERA) Annual Meeting, Toronto, Ontario.

Dodman, S., & **Holincheck, N.** (2018, November 14-16). *Supporting adjunct faculty: 10 tips for higher ed programs*. Online Learning Consortium, OLC Accelerate 2018 Conference, Orlando, Florida.

*Glaser, H.D., Flock, S., & **Holincheck, N.** (2018, November 15-18). *Leading the way: Building capacity and changing beliefs about giftedness in middle schools* at National Association for Gifted Children, Minneapolis, MN.

Holincheck, N., Horak, A., & *Xu, X. (2018, November 15-18). *Revealing potential in English Language Learners with problem-based learning* at National Association for Gifted Children, Minneapolis, MN.

*Brusseau, R., *Rybicki-Newman, M., & **Holincheck, N.** (2018, November 15-18). *Differentiating professional development: A growth mindset* at National Association for Gifted Children, Minneapolis, MN.

Fox, R., & **Holincheck, N.** (2018, June 18-20) *The essential role of research for IB teachers and IB teacher educators countries* at the 2018 IBEC conference at the University of Bath, United Kingdom.

Holincheck, N., Horak, A., & Shaklee, B. (2018, April 13-18). *Designing and implementing culturally responsive programming for Advanced Learners in K–12 schools* at the 2018 American Educational Research Association (AERA) Annual Meeting, New York, New York, USA.

*Galanti, T. M., **Holincheck, N.**, Tecuci, G., Trefil, J., Boicu, M., & Marcu, D. (2018, April 13-18). *Building information literacy: Using sInvestigator to evaluate the credibility of Internet sources* at the 2018 American Educational Research Association (AERA) Annual Meeting, New York, New York, USA.

Horak, A., **Holincheck, N.**, Shaklee, B., Xu, X., Rybicki-Newman, M. (2018, April 13-18). *Equity and engagement: Problem-based learning to identify students with potential* at the 2018 American Educational Research Association (AERA) Annual Meeting, New York, New York, USA.

Fox, R., *Webb, K., **Holincheck, N.**, Dodman, S. (2018, April 13-18). *Investigating the role of critical reflection in teachers' ability to effect change* at the 2018 American Educational Research Association (AERA) Annual Meeting, New York, New York, USA.

Holincheck, N., Galanti, T., Tecuci, G., Boicu, M., Trefil, J., & Marcu, D. (2018, January 3-6). *Developing critical thinking skills with sInvestigator* at the 2018 Association for Science Teacher Education (ASTE) International Conference, Baltimore, Maryland, USA.

Holincheck, N., Horak, A., *Webb, K., *Nagy, S., *Rybicki, M., *Glaser, H. (2017, November 9-12). *Out of the darkness: Using problem based learning to reveal potential in English Language Learners* at National Association for Gifted Children, Charlotte, NC.

*Xu, X., Horak, A., **Holincheck, N.,** & Bland, L. (2017, November 9-12). *Using the Cognitive Apprenticeship Rubric for reflection and growth of problem-based learning teachers* at National Association for Gifted Children, Charlotte, NC.

*Brusseau, R., *Webb, K., & **Holincheck, N.** (2017, November 9-12). *Supporting teachers in student-centered teaching: Lessons learned from PD for PBL implementation* at National Association for Gifted Children, Charlotte, NC.

Holincheck, N., Horak, A., & *Nagy, S. (2017, April 27-May 1). *Increasing opportunity: Using PBL as a universal screening to identify potential giftedness in middle school*, at the American Educational Research Association, San Antonio, TX, USA.

Horak, A., *Webb, K., & **Holincheck, N.** (2017, April 27-May 1). *Empowering English Language Learners' academic potential through problem-based learning: Leading teachers with a capacity-based lens*, at the American Educational Research Association, San Antonio, TX, USA.

Horak, A., Shaklee, B., & **Holincheck, N.** (2017, April 27-May 1). *Identifying and serving high-ability low-income students with problem-based learning*, at the American Educational Research Association, San Antonio, TX, USA.

Fox, R., Dodman, S.L., **Holincheck, N.,** & Webb, K. (2017, April 27-May 1). *Perspectives on culture: Teachers' development of critical reflective capacity through the cultural inquiry process*, at the American Educational Research Association, San Antonio, TX, USA.

Horak, A., **Holincheck, N.** & Webb, K. (2017, January 3-6). *Empowering English Language Learners' academic potential through problem-based learning: Leading teachers with a capacity-based lens*, at the Hawaii International Conference on Education, Honolulu, Hawaii, USA.

Horak, A. & **Holincheck, N.** (2017, January 3-6). *Using PBL to close the opportunity gap for achievement and engagement with diverse and low-SES populations*, at the Hawaii International Conference on Education, Honolulu, Hawaii, USA.

Holincheck, N. (2016, November 3-6). *A whole new world of identification: using PBL as a universal screening to close the opportunity gap*, at National Association for Gifted Children, Orlando, FL.

Horak, A. & **Holincheck, N.** (2016, November 3-6). *The force of curiosity awakens with problem based learning*, at National Association for Gifted Children, Orlando, FL.

Holincheck, N., Sell, C., *Matson, K. & *Williams, M. (2016, April 8-12). *Why are they staying? Teacher stayers' perceptions of noncognitive traits and their role in teacher retention*, at the American Education Research Association, Washington, D.C., USA.

Fox, R., **Holincheck, N.**, Dodman, S. & *Webb, K. (2016, April 8-12). *Beyond the dialectical: Social justice orientation as expressed in teacher portfolio reflections*, at the American Educational Research Association, Washington, D.C., USA.

Fox, R., Dodman, S., **Holincheck, N.**, & *Merz, S. (2015, April 16-20). *Understanding teacher learning during online and face-to-face professional development through reflections and portfolio evidence*, at the American Educational Research Association, Chicago, Illinois, USA..

Holincheck, N. & Palz, K. (2014, April 3-6). *Creating a blended learning environment*, at the National Conference on Science Education, Boston, Massachusetts, USA.

Holincheck, N. (2013, March 16-18). *Teachers' beliefs about and use of research in the classroom: Can teacher research help bridge the research-to-practice gap?* Invited presentation at the Association for Supervision and Curriculum Development Annual Conference, Chicago, Illinois, USA.

Holincheck, N. & Galluzzo, G. (2012, April 13-17). *Updating and validating a Teachers' Attitude Toward Education Research Scale*, at the American Educational Research Association, Vancouver, British Columbia, Canada.

Lukacs, K., **Holincheck, N.**, Fuhrman, C. & Galluzzo, G. (2008, February 7-10). *Educating teachers to be school-based agents of change: A tale of two cohorts*, at the American Association of Colleges for Teacher Education, New Orleans, Louisiana, USA.

Lukacs, K., **Holincheck, N.**, Fuhrman, C. & Galluzzo, G. (2007, April 9-13). *Exploring the ripple in the pond: Can early career teachers' attitudes toward educational change be explained?* at the American Educational Research Association, Chicago, Illinois, USA.

Lukacs, K., **Holincheck, N.**, Galluzzo, G., & Fuhrman, C. (2007, February 24-27). *Factors that influence early career teachers' attitudes toward change*. Paper presented at the Annual Meeting of the American Association of Colleges for Teacher Education, New York, USA.

WORKSHOPS AND PROFESSIONAL DEVELOPMENT PRESENTATIONS

N. Holincheck, & J. Rosenberg. *Quantum in your Classroom*. K-12 Teacher Professional Development. June 2022 - Present.

J. Rosenberg, & N. **Holincheck**. *Quantum Pathways Workshop*. Undergraduate Workforce Development. January 2024 - Present.

N. **Holincheck**, & J. Rosenberg. *Quantum is Elementary*. George Mason University, Quantum Science and Engineering Center's Quantum Week. April, 2024.

N. **Holincheck**. *Integrating STEM with Quantum*. University of North Florida. November, 2023.

J. Rosenberg, & N. **Holincheck**. *George Mason University's K-12 Quantum Education Program*. National Science and Technology Council (NSTC) Subcommittee on Quantum Information Science (SCQIS). October, 2023.

N. **Holincheck**, K. Miller, D. Adinuba, & S. Nadella. *Pathways To Quantum: Student Perspectives Panel*. Quantum World Congress. September, 2023.

S. Dodman, & N. **Holincheck**. *GMU CEHD Cares Webinar: Helping Children Learn*. May, 2020.

N. **Holincheck**. *What it Means to Support Women in STEM*. October, 2019.

N. **Holincheck**, & M. George. *Science Academy for Improving Learning in Science (SAILS)*. Elementary Science Professional Development, Alexandria City Public Schools. 2014-2016.

UNIVERSITY COURSES TAUGHT AND DEVELOPED

* *Course taught online*

George Mason University Master's Level Courses

- EDCI 559 Research and Assessment in Elementary Education
- EDCI 660 Integrated STEM Teaching* (developed & taught)
- EDCI 663 Research in Science Teaching*
- EDCI 663 Research in STEM Teaching* (developed & taught)
- EDCI 670 Advanced Methods in Science Teaching*
- EDCI 670 Advancing Equity in STEM Education* (developed & taught)
- EDCI 671 Innovations in Science Teaching*
- EDCI 671 Innovations in STEM Teaching* (developed)
- EDCI 777 Research to Practice*
- EDUC 514 Teaching Elementary Science in International Schools*
- EDUC 547 Scientific Inquiry and the Nature of Science
- EDUC 606 Education and Culture*
- EDUC 612 Inquiry into Practice*
- EDUC 613 How Students Learn*
- EDUC 614 Designing and Assessing Teaching and Learning*
- EDUC 615 Educational Change*

EDUC 622 Curriculum Development across IB Programs
EDUC 675 Research in Secondary Education

George Mason University - Doctoral Courses

EDCI 810 Foundations of Science Education Research
EDCI 813 Focused Science Education Research
EDRS 810 Problems and Methods in Education Research
EDUC 800 Ways of Knowing
EDUC 850 The Study of Teaching
EDUC 851 Research on Teacher Education
EDUC 865 Curriculum Theory and Practice

American University

EDU 205 Schools and Society*
EDU 610 Overview of Quantitative and Qualitative Research Strategies
EDU 631 Fundamentals of Management in Educational Organizations
EDU 596 STEM Education Research & Policy (developed & taught)

DOCTORAL STUDENT MENTORING

Dissertation Chair or Co-Chair

Emily Koerner Christopher – Teaching and Teacher Education (co-chair)

White female teachers and their students: An exploration of the beliefs of preservice teachers and interns regarding intersectionalities of today's students

Defended Dissertation Spring 2019

Kathleen Kraus-Zadrozny – Education Policy

A survey of Virginia Assistant Principals' Influences and choice of student achievement goals in performance evaluations

Defended Dissertation Spring 2020

Holly Glaser – Teaching and Teacher Education

How teachers create talent development contexts for students from historically underrepresented populations in gifted programs

Defended Dissertation Fall 2020

Rebecca Brusseau – Teaching and Teacher Education (co-chair)

Professional taleworlds: In-service teacher small stories as participation in knowledge construction and critical reflection of the sociopolitical contexts of education

Defended Dissertation Spring 2023

Michelle Colandene – Science Education Research & Teaching and Teacher Education

Teachers' critical pedagogical visual literacy skills in elementary science
Defended Dissertation Spring 2023

Laura Godlewski-Faltynski – Teaching and Teacher Education
Emergent digital equity: Exploring educators' perspectives and applications in learning technologies and multicultural education
Defended Dissertation Spring 2023

Erica Meadows – Teaching and Teacher Education
The professional development experience of monolingual teachers who are learning to teach multilingual students
Defended Dissertation Spring 2024

Jessica Fontaine – Higher Education (co-chair)
Adoption of financial innovation in higher education
Defended Dissertation Spring 2024

Rocio Quiroga-Velasquez – Science Education Research
Testimonios of first-generation-in-college Latinx students pursuing a STEM degree: The influence of intersectionality on STEM identity
Defended Dissertation Fall 2024

Tammy Kraft - Math Education Leadership (co-chair)
Exceptional mathematics teachers' beliefs about the nature of mathematics and teaching and learning
Defended Dissertation Fall 2024

Cassandra Eatmon - Math Education Leadership (co-chair)
Teachers' perception of the mathematics content and pedagogical knowledge needed to teach English Learners in high school Algebra 1.
Defended Proposal Fall 2024

Lakshmi Peddyreddy - Math Education Leadership
Defended Proposal January 2026

Tiffany Butler - Science Education Research
Defended Proposal February 2025

Dissertation Committee Member

Sarah Glassman – Science Education Leadership
The relationship between observed task characteristics and the pattern of seventh-grade

students' situational engagement during a science unit

Defended Dissertation Fall 2016

Danielle Kittrell – Science Education Research

Why they stayed: A narrative inquiry of three black women science educators

Defended Dissertation Fall 2017

Anthony Garces Foley – Education Policy

California school superintendents' opinion of LGBT-inclusive instruction and the Fair Education Act's implementation in 2015-2016

Defended Dissertation Fall 2017

Amy Boehl – Education Policy

What decisions do teachers make in the absence of policy? A qualitative study of test retakes at the classroom level

Defended Dissertation Spring 2018

Linda Peterson – Science Education Leadership

Capturing middle school science teachers' perceptions, learning, and instructional enactments in a professional development designed to facilitate students' collaborative discourse

Defended Dissertation Spring 2018

Nick Humbert – Education Leadership

Adequacy of decision-making for Virginia public high school assistant principals and an examination of job satisfaction and job efficacy

Defended Dissertation Fall 2018

Steven Nagy – Education Leadership

Sense of belonging, school climate, and teacher-student relationships through sustainable leadership: An international case study

Defended Dissertation Summer 2019

Leticia Guzman – Higher Education

The impact of a STEM Summer Bridge program on underrepresented minorities

Defended Dissertation Spring 2021

Stephanie Stehle – Science Education Research

High school students' use of metacognition in physics problem solving

Defended Dissertation Fall 2021

Hyejin Yoon - Teaching and Teacher Education

Exploring South Korean English language teachers' intercultural competence: In the context of working with North Korean refugee students
Defended Dissertation Spring 2023

Lori Silver – Education Leadership & Literacy
District leaders' perceptions of organizational learning in the area of literacy
Defended Dissertation Spring 2024

Lindsay Zurawksi – Teaching and Teacher Education
Standard outcomes lesson and reflection (SOLAR) guide
Defended Dissertation Summer 2024

Sara Birkhead – Math Education Leadership
The use of video in teacher inquiry as a form of scalable professional development to support student-centered mathematics instruction.
Defended Dissertation Spring 2025

Nishchal Thapa Magar – Physics Education Research (College of Science)
Graduate Teaching Assistants' (GTAs) professional development, teaching skills, identity, background, classroom culture, and roles.
Defended Dissertation Fall 2025

Doctoral Portfolio Chair (Pre-Dissertation)

Christina Cameron - Science Education Research
Courtney Wulf – Science Education Research, Education Leadership
Jennifer Simons - Science Education Research, Teaching and Teacher Education
Tiffany Butler – Science Education Research
Rebecca Bushway – Science Education Research
Rebecca Brusseau – Teaching and Teacher Education
Laura Godlewski-Faltynski – Teaching and Teacher Education
Jessica Fontaine – Higher Education
Sara Townsend – Education Policy

Doctoral Portfolio Committee Member (Pre-Dissertation)

Laura Akesson – Physics Education Research (College of Science)
Lakshmi Deepa Kumari Peddyreddy – Mathematics Education Leadership
Desmond Alexander Mcglone – Mathematics Education Leadership
Jessica Shirley - Teaching and Teacher Education, Multilingual/Multicultural Education
Fardousa Wardere – Education Leadership, Science Education Research
Rocio Velasquez – Science Education Research

Tammy Kraft – Mathematics Education Leadership
James Swart – Science Education Research
Jessica Fontaine – Higher Education
Stephanie Stehle – Science Education Research
Holly Glaser – Teaching and Teacher Education
Hyejin Yoon – Teaching and Teacher Education
Erica Meadows – Teaching and Teacher Education
Sara Birkhead – Math Education Leadership
Michelle Colandene – Science Education Research
Lindsay Zurawksi Watkins – Teaching and Teacher Education
Leticia Guzman – Higher Education
Cassandra Eatmon – Mathematics Education Leadership
Julia Renberg – Education Leadership
Mubarak Buti – Education Policy
Morgan Fisher – Higher Education
Michelle Dunaway – Teaching and Teacher Education
Lori Silver – Education Leadership
Tim Cox – Higher Education
Jeremy Rogers – Higher Education
Kathy Matson – Mathematics Education Leadership
Danielle Kittrell – Science Education Research

SERVICE

National & International Professional Service

- Program Committee, IEEE Quantum Week, Quantum Science and Engineering Education Conference 2025-present (QSEEC25)
- Editorial Board, *Interdisciplinary Journal of Problem-based Learning* (2024-present)
- Guest Editor, Special Issue of the *Interdisciplinary Journal of Problem-based Learning* focused on Designing for Equity within Problem-Based and Project-Based Learning (Fall 2023-January 2025)
- Invited Participant, Workshop on a National Quantum Education Center (February 2024)
- Secretary/Treasurer, AERA SIG Problem-Based and Project-Based Learning (2022-2024)
- National Science Foundation Reviewer, Division of Research & Learning (June 2019, November 2021, October 2023, March 2024, November 2024)
 - Panelist for various NSF programs
 - NSF ad hoc reviewer, quantum education
- Conference Proposal Reviewer, American Educational Research Association (2011-present), National Association for Research in Science Teaching (2023-present)

- Conference Mentor, National Board for Professional Teaching Standards, Teaching & Learning Conference, (2015)
- Journal Reviewer
 - *International Journal of STEM Education*, (2020-present)
 - *Journal of Science Education and Technology*, (2021-present)
 - *Journal of Teacher Education*, (2023-present)
 - *School Science and Mathematics*, (2023-present)
 - *Applied Environmental Education & Communication* (2023-present)
 - *Interdisciplinary Journal of Problem-based Learning* (2024-present)
 - *Journal of Teaching in Physical Education*, (2024-present)
 - *Discovery Education*, (2024-present)
 - *Education Sciences*, (2024-present)

College/University Service

- Associate Director of K-12 Quantum Education, Quantum Science and Engineering Center, George Mason University (2022 - present)
- Assistant Director, Center for Social Equity through Science Education, George Mason University (2017-present)
- Member, George Mason University’s Undergraduate Learning Supports Task Force (2024)
- Faculty Sponsor of FIRST Alumni Association at GMU (2022-present)
- Member, Dean’s Council, College of Education and Human Development (2016-2018, 2023-present)
- Member, Graduate School of Education Curriculum Committee (2018-2020)
- Co-chair, CAEP Advanced Standards Working Group (2017-2019)
- Member, CEHD PhD Committee, Teaching and Teacher Education representative (2017-2019)
- Member, Student Evaluation Task Force, CEHD (2016-2017)
- Co-Chair, Professional Development Committee (2015-2016)
- Member, Professional Development Committee (2014-2015)

Service to STEM Education and the Teaching Profession

- FIRST Chesapeake Team Advisory Committee
2019 – 2024
- For Inspiration and Recognition of Science and Technology (FIRST)
FIRST Robotics Mentor to student FIRST Tech Challenge (FTC) & FIRST Robotics Competition (FRC) teams in Virginia FIRST and FIRST Chesapeake District

Centreville High School Pyramid teams
Spring 2014 - Spring 2023

- Fairfax County Public Schools (FCPS) Advanced Academic Programs Advisory Committee
Fall 2019 - Spring 2022
- FIRST Chesapeake Women in STEM Committee
Spring 2020 - 2021
- Science Professional Development: Science Content Academy
Alexandria City Public Schools, Professional Development planning & implementation
Spring 2015 – Summer 2017
- Evaluator – Secondary Science Pedagogy
Frederick County Public Schools, Academic Review of James Wood High School
November, 2013

Other Service and Professional Experiences

- Virginia Initiatives in Science Teaching and Achievement (VISTA),
Science Education Faculty Academy (SEFA), May, 2014
- What Works Clearinghouse Reviewer Training, July 2012
- American Institute for Research
Item Writer, August 2004-May 2008
- Evaluation Consultant, Reading First Teacher Education Network (RFTEN)
National Council for Accreditation of Teacher Education, 2004-2006

PROFESSIONAL AFFILIATIONS

American Educational Research Association (AERA)
American Association of Physics Teachers (AAPT)
Association for Science Teacher Education (ASTE)
Association of Teacher Educators (ATE)
National Science Teachers Association (NSTA)
National Association of Research in Science Teaching (NARST)
School Science and Mathematics Association (SSMA)