Stony Brook University

ANGELA M. KELLY

Professor, Science Education and Physics, Stony Brook University
Associate Director, Ph.D. Program in STEM Education
Program Director, Master of Arts in Teaching (M.A.T.) Physics

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TEACHING AND RESEARCH INTERESTS

Equity in pre-college and university physical science and engineering education; reformed STEM teaching practices; sociocognitive influences on STEM access and participation; STEM curricular integration; science teacher recruitment and retention; quantum information science and technology (QIST) education.

ACADEMIC CREDENTIALS AND EXPERIENCE

HIGHER EDUCATION

Columbia University, New York, NY
Ph.D., Science Education 2006
Dissertation Title: *Newton in the Big Apple: Issues of Equity in Physics Access and Enrollment in New York City Public High Schools*
M.Phil., Science Education 2005

Teachers College, Columbia University, New York, NY
Ed.M., Curriculum and Teaching 2007
M.A., Secondary School Science Education 2000

La Salle University, Philadelphia, PA
B.A., Chemistry 1993

EXPERIENCE

Undergraduate and Graduate Teaching and Research – Tenure Track Appointments
Professor of Science Education and Physics, Stony Brook University, NY 2022-present
Affiliated Faculty, Women in Science and Engineering Honors Program, Stony Brook University, NY 2017-present
Associate Professor of Science Education and Physics, Stony Brook University, NY 2014-22
Assistant Professor of Science Education and Physics, Stony Brook University, NY 2011-14
Assistant Professor of Science Education, Lehman College, CUNY, Bronx, NY 2007-11
Department of Middle & High School Education, School of Education

Higher Education Administration
Program Director, Master of Arts in Teaching Physics, Stony Brook University 2023-present
Associate Director, Ph.D. in STEM Education, Institute for STEM Education, Stony Brook University 2011-present
Acting Executive Director, Institute for STEM Education, Stony Brook University 2018-19, 2025
Program Co-Coordinator, M.S.Ed. in Science Education, Lehman College, CUNY, Bronx, NY 2007-11

Undergraduate and Graduate Teaching – Part-Time Appointments
Workshop Instructor, American Museum of Natural History, New York, NY 2015-20
Adjunct Assistant Professor, Teachers College, Columbia University, New York, NY 2004-10
Workshop Instructor, College Now, CUNY, Bronx, NY 2008-09
Workshop Instructor, Center for Technology and School Change, New York, NY 2004-08

Secondary Science Teaching (Grades 7-12)

Physics and Chemistry Teacher, Bronx Institute, Lehman College, CUNY, Bronx, NY 2008-14
Center for Gifted and Talented Youth and Enlace Latino Collegiate Society Programs
Physics Teacher, Jonathan Dayton High School, Springfield, NJ 2005-07
Physics and Chemistry Teacher, Summit High School, Summit, NJ 2000-04
Chemistry and Physical Science Teacher, Union High School, Union, NJ 1999-2000

Other Professional Experience

Evaluation Consultant, STEM Teacher Preparation Programs, University of Texas – San Antonio 2020-21
Evaluation Consultant, Undergraduate Program in Electrical Engineering, Stony Brook University 2017
Licensure Consultant, New Jersey Commission on Higher Education 2015
Science Curriculum Consultant, Bronx Early College Academy, New York City Department of Education 2007-08
Supervisor of Pre-Service Physics Teachers, Teachers College, Columbia University 2004-05
Peace Corps Fellows In-Service Field Supervisor, Teachers College, Columbia University 2004-05

EDUCATIONAL LICENSURE

New Jersey Administrative Certificate: Supervisor of Science (2005)
New Jersey Standard Instructional Certificates: Physical Science (2001) and English (2005)

RESEARCH AND SCHOLARSHIP

RESEARCH AND SCHOLARSHIP SUMMARY

Journal articles (refereed): 62	Invited talks/colloquia/panels: 69
Conference proceedings (refereed): 21	Conference talks/papers/abstracts (unpublished): 133
Invited articles/proceedings: 8	*h*-index: 22
Book chapters: 3	¡10-index: 38
Technical reports and position papers: 3	Grants awarded as PI or co-PI: 30 ($10.4M)

PUBLICATIONS

Refereed Journals

[62] Barnes, E., Bennett, M. B., Boltasseva, A., Borish, V., Carr, L. D., Easton, E. W., Economou, S. E., Edwards, E. E., Finkelstein, N. D., Fracchiolla, C., Freericks, J. K., Goss, V., Hannum, M., Holinchek, N., Kelly, A. M., Lewandowski, H. J., Matsler, K. J., Mercurio, E., Montaño, I. … Zwickl, B. M. (in press). Outcomes from a Workshop on a National Center for Quantum Education. *EJP Quantum Technology.* http://arxiv.org/abs/2410.23460

[61] Dwyer, K.,* & Kelly, A. M. (in press). U.S. district-level algebra acceleration in eighth grade and longitudinal mathematics outcomes. *Journal for Research in Mathematics Education, 56*(2). https://doi.org/10.5951/jresematheduc-2023-0138

[60] Hatzfeld. J.,* Kelly, A. M., & Krakehl, R.* (2025). School-level physical science enrollment and performance as mediators of poverty and graduation. *School Science and Mathematics.* Advance online publication. https://doi.org/10.1111/ssm.18333

[59] Kelly, A. M., Wei, T. C., & Schneble, D., & Darienzo, M.* (2025). Exploratory factor analysis of a precollege quantum information science and technology survey: Exploring career aspiration formation and student interest. *EJP Quantum Technology, 12*(11). https://doi.org/10.1140/epjqt/s40507-025-00313-w

[58] Richards, Z.,* & Kelly, A. M. (2025). STEM enrollment decision trees as graduation predictors for community college students enrolled in remedial mathematics. *Community College Review, 53*(1), 85–104. https://doi.org/10.1177/00915521241279832

[57] Schneble, D., Wei, T. C., & Kelly, A. M. (2025). Quantum information science and technology secondary outreach: Conceptual progressions for introducing principles and programming skills. *American Journal of Physics, 93*(1), 88–97. https://doi.org/10.1119/5.0211535

*Ph.D. candidate in Program in Science/STEM Education or Program in Electrical & Computer Engineering at Stony Brook.

Refereed Journals (continued)

[56] Chatham, E.,* & Kelly, A. M. (2024). Leveraging instructional routines to facilitate NGSS implementation in high school science. *Journal of Science Teacher Education, 36.* Advance online publication. https://doi.org/10.1080/1046560X.2024.2442838

[55] Darienzo, M.,* Kelly, A. M., Wei, T. C., & Schneble, D. (2024). Students' attitudes towards quantum information science and technology in a high school outreach program. *Physical Review Physics Education Research, 20*(2)*,* 020126*.* https://doi.org/10.1103/PhysRevPhysEducRes.20.020126

[54] De La Cruz, R.,* & Kelly, A. M. (2024). Exploring the inverse-square law through illumination with Arduino. *The Physics Teacher, 62*(6), 527-530. https://doi.org/10.1119/5.0150168

[53] Gearns, R.,* Kelly, A. M., & Bugallo, M. F. (2024). High school counseling practices related to students' post-secondary STEM participation. *The Career Development Quarterly, 72*(1), 2-17. https://doi.org/10.1002/cdq.12338

[52] Kelly, A. M., Darienzo, M.,* Wei, T. C., & Schneble, D. (2024). Quantum information science and technology professional learning for secondary science, technology, engineering, and mathematics teachers. *Physical Review Physics Education Research, 20*(2), 020154*.* https://doi.org/10.1103/PhysRevPhysEducRes.20.020154

[51] Krakehl, R.,* & Kelly, A. M. (2024). School-level science and mathematics predictors of precollege physics enrollment and performance in the United States*. International Journal of Science and Mathematics Education.*. Advance online publication. https://doi.org/10.1007/s10763-023-10436-0

[50] Krakehl, R.,* Kelly, A. M., & Khosla, P.† (2024). Gender, teacher, and school characteristics as predictors of Advanced Placement Physics performance. *School Science and Mathematics.* Advance online publication. https://doi.org/10.1111/ssm.12651

[49] Miller, E., & Kelly, A. M. (2024). The Cornell note taking method in flipped science classrooms. *Science Scope, 47*(6)*.*

[48] Slagus, L. M.,*¶ & Kelly, A. M. (2024). Professional development partnership between urban middle school science teachers and informal science institutions. *Research in Science & Technological Education, 42*(2), 294-319*.* https://doi.org/10.1080/02635143.2022.2070148

[47] Richards, Z.,* & Kelly, A. M. (2023). Predicting community college astronomy performance with logistic regression. *Physical Review Physics Education Research, 19*(1), 010119. https://doi.org/10.1103/PhysRevPhysEducRes.19.010119

[46] Rosen, D. J.,* & Kelly, A. M. (2023). Mixed methods study of student participation and self-efficacy in remote asynchronous undergraduate physics laboratories: Contributors, lurkers, and outsiders. *International Journal of STEM Education, 10*(34)*.* https://doi.org/10.1186/s40594-023-00428-5

[45] Schlendorf, C.,* Kelly, A. M., & Krakehl, R.* (2023). Earth science course availability, teacher and school-level characteristics as predictors of precollege Earth science performance. *Journal of Geoscience Education, 71*(2), 222-237. https://doi.org/10.1080/10899995.2022.2161772

[44] Palermo, M.,* Kelly, A. M., & Krakehl, R.* (2022). Intersectional analysis of Advanced Placement Chemistry participation and performance by gender and ethnicity. *Journal of Chemical Education, 99*(3), 1347-1357*.* https://doi.org/10.1021/acs.jchemed.1c01047

[43] Palermo, M.,* Kelly, A. M., & Krakehl, R.* (2022). Physics teacher retention, attrition, and migration. *Journal of Science Teacher Education, 33*(4)*,* 368-391. https://doi.org/10.1080/1046560X.2021.1946638

[42] Rosen, D. J.,* & Kelly, A. M. (2022). Working together or alone, near or far: Social support and communities of practice in remote and in-person physics laboratories. *Physical Review Physics Education Research, 18*(1), 010105. https://doi.org/10.1103/PhysRevPhysEducRes.18.010105

[41] Christian, K. B.,* Kelly, A. M., & Bugallo, M. F. (2021). NGSS-based professional development for implementing engineering design in STEM instruction. *International Journal of STEM Education, 8*(21)*.* https://doi.org/10.1186/s40594-021-00284-1

[40] Krakehl, R.,* & Kelly, A. M. (2021). Intersectional analysis of Advanced Placement Physics participation and performance by gender and ethnicity. *Physical Review Physics Education Research, 17*(2), 020105*.* https://doi.org/10.1103/PhysRevPhysEducRes.17.020105

† Undergraduate research assistant in the Department of Physics & Astronomy, Stony Brook University.

¶ M.A.T. candidate at Stony Brook University or M.S.Ed. candidate in Science Education at Lehman College, CUNY.

Refereed Journals (continued)

[39] McHugh, L.,* Kelly, A. M., Fisher, J. H., & Burghardt, M. D. (2021). Graphing as a means to improve middle school science understanding and mathematics-related affective domains. *Research in Science Education, 51*(2), 301-323. https://doi.org/10.1007/s11165-018-9796-6

[38] Mintz, J. A.,* & Kelly, A. M. (2021). Science teacher motivation and evaluation policy in a high-stakes testing state. *Educational Policy, 35*(1), 3-40. https://doi.org/10.1177/0895904818810520

[37] Nehmeh, G.,* & Kelly, A. M. (2021). Facilitating the self-determination of undergraduate women in physics: The role of external validation. *Research in Science & Technological Education, 39*(3), 306-327. https://doi.org/10.1080/02635143.2020.1740668

[36] Palermo, M.,* Kelly, A. M., & Krakehl, R.* (2021). Chemistry teacher retention, attrition, and migration. *Journal of Chemical Education, 98*(12), 3704-3713. https://doi.org/10.1021/acs.jchemed.1c00888

[35] Sasway, H.,* & Kelly, A. M. (2021). Instructor behaviors that affect student attitudes towards science. *Community College Journal of Research and Practice, 45*(6), 385-402. https://doi.org/10.1080/10668926.2020.1719937

[34] Stuart, Z.,* Kelly, A. M., Westerfeld, D., & Bugallo, M. F. (2021). NGSS engineering practices in physics instruction: Building a night light. *The Physics Teacher, 59*(3), 171-174. https://doi.org/10.1119/10.0003668

[33] Cohen, R.,* & Kelly, A. M. (2020). Mathematics as a factor in community college STEM performance, persistence, and degree attainment. *Journal of Research in Science Teaching, 57*(2), 279-307. https://doi.org/10.1002/tea.21594

[32] Krakehl, R.,* Kelly, A. M., Sheppard, K., & Palermo, M.* (2020). Physics teacher isolation, contextual characteristics, and student achievement. *Physical Review Physics Education Research, 16*(2), 020117. https://doi.org/10.1103/PhysRevPhysEducRes.16.020117

[31] Rosen, D. J.,* & Kelly, A. M. (2020). Epistemology, socialization, help seeking, and gender-based views in traditional and online, hands-on undergraduate physics laboratories. *Physical Review Physics Education Research, 16*(2), 020116. https://doi.org/10.1103/PhysRevPhysEducRes.16.020116

[30] Sheppard, K., Padwa, L.,* Kelly, A. M., & Krakehl. R.* (2020). Out-of-field teaching in chemistry and physics: An empirical census study. *Journal of Science Teacher Education, 31*(7), 746-767. https://doi.org/10.1080/1046560X.2019.1702268

[29] Cohen, R.,* & Kelly, A. M. (2019). Community college chemistry coursetaking and STEM academic persistence. *Journal of Chemical Education, 96*(1), 3-11. https://doi.org/10.1021/acs.jchemed.8b00586

[28] Cohen, R.,* & Kelly, A. M. (2019). The impact of community college science and mathematics coursetaking and remediation on graduation, transfer, and non-completion. *The Review of Higher Education, 42*(2), 595-617. https://doi.org/10.1353/rhe.2019.0008

[27] Gatz, J.,* Kelly, A. M., & Clark, S. L. (2019). Improved executive function and science achievement for at-risk middle school girls in an aerobic fitness program. *The Journal of Early Adolescence, 39*(3), 453-469. https://doi.org/10.1177/0272431618770786

[26] Kelly, A. M., & Sheppard, K. (2019). Access to elite urban science schools in the U.S.: Opportunity, disparate impact, and equal protection. *Teachers College Record,* 22951. https://journals.sagepub.com/pb-assets/cmscontent/TCZ/Research%20Notes%20Collection/2019%20Research%20Notes/Access%20to%20Elite%20Public%20Schools-%20Opportunity,%20Disparate%20Impact,%20and%20Equal%20Protection%20-1656010563.pdf

[25] Padwa, L.,* Kelly, A. M., & Sheppard, K. (2019). Chemistry teacher isolation, contextual characteristics, and student performance. *Journal of Chemical Education, 96*(11), 2383-2392. https://doi.org/10.1021/acs.jchemed.9b00392

[24] Gatz, J.,* & Kelly, A. M. (2018). Afterschool school triathlon training for 11-14 year old girls: Influences on academic motivation and achievement. *Health Education Journal, 77*(2), 156-168. https://doi.org/10.1177/0017896917739444

[23] Hantz, C.,* Sheppard, K., & Kelly, A. M. (2018). Early history of Regents Earth science education in New York State. *The Science Teachers Bulletin, 81*(1), 24-35.

[22] McHugh, L.,* Kelly, A. M., & Burghardt, M. D. (2018). Professional development for a middle school mathematics-infused science curriculum. *Journal of Science Teacher Education, 29*(8), 804-828. https://doi.org/10.1080/1046560X.2018.1514825

Refereed Journals (continued)

[21] Nehmeh, G.,* & Kelly, A. M. (2018). Urban science teachers in isolation: Challenges, resilience, and adaptive action. *Journal of Science Teacher Education, 29*(6), 527-549. https://doi.org/10.1080/1046560X.2018.1474425

[20] Nehmeh, G.,* & Kelly, A. M. (2018). Women physicists and sociocognitive considerations in career choice and persistence. *Journal of Women and Minorities in Science and Engineering, 24*(2), 95-119. https://doi.org/10.1615/JWomenMinorScienEng.2017019867

[19] Bugallo, M. F., & Kelly, A. M. (2017). Engineering outreach: Yesterday, today, and tomorrow. *IEEE Signal Processing Magazine, 34*(3), 69-100. https://doi.org/10.1109/MSP.2017.2673018
§***Featured Article,*** **September Issue of *Science Scope***

[18] McHugh, L.,* Kelly, A. M., & Burghardt, M. D. (2017). Teaching thermal energy concepts in a middle school mathematics-infused science curriculum. *Science Scope, 41*(1), 33-40. https://doi.org/10.2505/4/ss17_041_01_43

[17] Kelly, A. M. (2016). Social cognitive perspective of gender disparities in undergraduate physics. *Physical Review Physics Education Research, 12*(2), 020116. https://doi.org/10.1103/PhysRevPhysEducRes.12.020116

[16] Bugallo, M. F., Kelly, A. M., & Ha, M. (2015). Impact of a university-based electrical and computer engineering summer program for high school students. *International Journal of Engineering Education, 31*(5), 1419-1427.

[15] Kelly, A. M., Gningue, S. M., & Qian, G. (2015). First-year urban mathematics and science teachers: Classroom challenges and reflective solutions. *Education and Urban Society, 47*(2), 132-159. https://doi.org/10.1177/0013124513489147

[14] Kelly, A. M. (2013). Physics teachers' perspectives on factors that affect urban physics participation and accessibility. *Physical Review Physics Education Research, 9*(1), 010122. https://doi.org/10.1103/PhysRevSTPER.9.010122
§***Featured Article,*** **Focused Collection on Examining Racial Diversity and Identity in *PRPER***

[13] Kelly, A. M. (2012). Engaging students in classifying matter. *The Science Teacher, 79*(7), 16-17.

[12] Kelly, A. M., & Gonzalez, C.¶ (2012). Urban secondary science teacher career satisfaction and retention in an alternative certification program. *Excelsior: Leadership in Teaching and Learning, 6*(2), 47-64.

[11] Bradley, D. B., & Kelly, A. M. (2011). Promoting inclusiveness in acoustical physics. *Academic Exchange Quarterly, 15*(4), 88-93. Reprinted in Deprez, M. D., (Ed.). (2014). *Collaboration in Education: Sound Instruction, Volume 3.* Stuyvesant Falls, NY: Rapid Intellect.

[10] Kelly, A. M. (2011). Teaching Newton's laws with the iPod Touch in conceptual physics. *The Physics Teacher, 49*(4), 202-205. https://doi.org/10.1119/1.3566026
§***Featured Article,*** **April Issue of *The Physics Teacher***

[9] Kelly, A. M., & Kennedy-Shaffer, R.¶ (2011). Teaching Newton's laws to urban middle school students: Strategies for conceptual understanding. *Journal of Curriculum and Instruction, 5*(1), 54-67. https://doi.org/10.3776/joci.2011.v5n1p54-67

[8] Aquino, A. E., Kelly, A. M., & Bayne, G. U. (2010). Sharing our teachers: The required graduate class at the American Museum of Natural History for Lehman College (CUNY). *The New Educator, 6*(3/4), 225-246. https://doi.org/10.1080/1547688X.2010.10399603

[7] Chen, J., Shankar, S., Kelly, A. M., Gningue, S., Rajaravivarma, R., & Didier, C. J. (2010). A two-stage approach for contiguous sequential pattern mining. *International Transactions on Systems Science and Applications, 6*(2/3), 113-120.

[6] Kelly, A. M. (2010). Transformative informal physics in the Bronx. *Academic Exchange Quarterly, 14*(1), 57-62.
§***Editors' Choice Honors,*** **Spring Issue of *Academic Exchange Quarterly***

[5] Kelly, A. M., & Sheppard, K. (2010). The relationship between the urban small schools movement and access to physics education. *Science Educator, 19*(1), 14-25.

[4] Kelly, A. M., & Smith, J. (2010). Science education and TESOL: A collaborative professional development model for first-year teachers in alternative certification programs. *Excelsior: Leadership in Teaching and Learning, 4*(2), 27-45.

[3] Sloan, H., & Kelly, A. M. (2010). The TRUST (Teacher Renewal for Urban Science Teachers) Partnership: Institutional impacts at Lehman College. *The New Educator, 6*(3/4), 212-224. https://doi.org/10.1080/1547688X.2010.10399602

§ Recipient of scholarly recognition.

Refereed Journals (continued)

[2] Kelly, A. M., & Sheppard, K. (2009). Secondary physics availability in an urban setting: The relationship to academic achievement and course offerings. *American Journal of Physics*, *77*(10), 902-906. https://doi.org/10.1119/1.3191690

[1] Kelly, A. M., & Sheppard, K. (2008). Newton in the Big Apple: Access to high school physics in New York City. *The Physics Teacher, 46*(5), 280-283. https://doi.org/10.1119/1.2909745

Refereed Conference Proceedings

[21] Kelly, A. M., Wei, T. C., Schneble, D., & Darienzo, M.* (in press). ITEST Quantum Education for Students and Teachers (QuEST): Preparing the Next Generation of Global Technology Innovators. *Proceedings of the 2025 American Society for Engineering Education Annual Conference & Exposition,* Montreál, QC, Canada.

[20] Darienzo, M.,* & Kelly, A. M. (2024). Review of Literature on Quantum Information Science and Technology Programs for High School Students. *Quantum Science and Engineering Education Conference (QSEEC24)* (pp. 96–103)*,* Montreál, QC, Canada. https://doi.org/10.1109/QCE60285.2024.20464

[19] Kelly, A. M., & Bugallo, M. F. (2023). Cognitive Load, Transfer, and Instructional Decision Making in an Informal Middle School STEM Integration Program. *Proceedings of the 2023 American Society for Engineering Education Annual Conference & Exposition,* Baltimore, MD, United States.

[18] Pope, D.,* & Kelly, A. M. (2022). Preservice Mathematics Teacher Beliefs Regarding Procedural Versus Conceptual Teaching Before and After Methods Courses. *Proceedings of the Forty-Fourth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1244-1248), Nashville, TN, United States. http://www.pmena.org/pmenaproceedings/PMENA%2044%202022%20Proceedings.pdf

[17] Stuart, Z.,* Kelly, A. M., & Bugallo, M. F. (2020). University-designed middle school science experiences aligned with NGSS. *Proceedings of the 2020 American Society for Engineering Education Annual Conference & Exposition*, Montréal, Quebec, Canada. https://peer.asee.org/36014

[16] Gatz, J.,* Kelly, A. M., & Bugallo, M. F. (2019). A mixed methods analysis of goals and the impact of peer mentoring for participants in the WISE Honors Program. *American Society for Engineering Education Annual Conference & Exposition,* Tampa, FL, United States. https://peer.asee.org/25688
§***Denise D. Denton Best Paper Award, ASEE Women in Engineering Division, 2019***

[15] Krayem, Z. N.,* Kelly, A. M., McCauley, J., & Bugallo, M. F. (2019). Engineering exposure for pre-college women: A university-based workshop model. *Integrated STEM Education Conference (ISEC), 2019 IEEE 9th* (pp. 156-159), Princeton, NJ, United States. https://doi.org/10.1109/ISECon.2019.8881954

[14] Christian, K.,* Kelly, A. M., Bugallo, M. F., & Sheppard, K. (2018). University-based training of high school science teachers to implement the Next Generation Science Standards. *Proceedings of the 2018 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, United States. https://peer.asee.org/29898

[13] Gatz, J.,* Kelly, A. M., & Bugallo, M. F. (2018). The power of peer mentoring of undergraduate women in engineering: Fostering persistence through academic and social integration. *Proceedings of the 2018 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, United States. https://peer.asee.org/31119
§***Best Diversity Paper Award, ASEE Women in Engineering Division, 2018***

[12] Gearns, R.,* Kelly, A. M., & Bugallo, M. F. (2018). Professional development for high school guidance counselors to facilitate precollege STEM preparation. *Proceedings of the 2018 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, United States. https://peer.asee.org/30897

[11] Kelly, A. M., Aveni, D., & Bugallo, M. F. (2018). Women in science and engineering: A framework for an honors undergraduate curriculum. *Proceedings of the 2018 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, United States. https://peer.asee.org/31256

[10] Kelly, A. M., Bugallo, M. F., Nehmeh, G.,* & Gatz, J.* (2018). Improving undergraduate science and engineering instruction at a research university: Challenges and solutions. *New Perspectives in Science Education, Conference Proceedings 2018*, *7th ed.* (pp. 318-322), Florence, Italy.

[9] Krayem, Z. N.,* Kelly, A. M., Bugallo, M. F., Westerfeld, D., Gearns, R.,* & Westervelt, K.¶ (2018). Precollege electrical engineering outreach: The design of a home security system. *Proceedings of the 2018 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, United States. https://peer.asee.org/30881

Refereed Conference Proceedings (continued)

[8] Sherwood, K.,* Kelly, A. M., & Bugallo, M. F. (2018). Peer mentoring of undergraduate women in engineering as a mechanism for leadership transition. *Proceedings of the 2018 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, United States. https://peer.asee.org/30864

[7] Bugallo, M. F., & Kelly, A. M. (2015). An outreach afterschool program to introduce high school students to electrical engineering. *International Conference on Acoustics, Speech, and Signal Processing* (pp. 5540-5544), Brisbane, Queensland, Australia. https://doi.org/10.1109/ICASSP.2015.7179031

[6] Issapour, M.,* & Kelly, A. M. (2015). How student gender, SAT scores and interest in science relates to their performance in introductory coursework in engineering technology. *Integrated STEM Education Conference (ISEC), 2015 IEEE 5th* (pp. 221-224), Princeton, NJ, United States. https://doi.org/10.1109/ISECon.2015.7119928

[5] Kelly, A. M., Charles, T.,* Ha, M., & Sheppard, K. (2015). A case study of a school district assessment system and its correlation with student performance in physical sciences. In P.V. Engelhardt, A.D. Churukian, & D.L. Jones (Eds.), *2014 American Institute of Physics Conference Proceedings Series: Vol. 1070. Physics Education Research Conference* (pp. 127-130). American Institute of Physics. https://doi.org/10.1119/perc.2014.pr.028

[4] Bugallo, M. F., & Kelly, A. M. (2014). A pre-college recruitment strategy for electrical and computer engineering study. *Integrated STEM Education Conference (ISEC), 2014 IEEE 4th* (pp. 1-4), Princeton, NJ, United States. https://doi.org/10.1109/ISECon.2014.6891010

[3] Kelly, A. M. (2010). Differentiating the underrepresented: Physics opportunities for Bronx high school students in a university setting. In H. Oluseyi (Ed.), *2009 American Institute of Physics Conference Proceedings Series: Vol. 1280. Joint Annual Conference of the National Society of Black Physicists and the National Society of Hispanic Physicists* (pp. 176-181). American Institute of Physics. https://doi.org/10.1063/1.3507197

[2] Chen, J., Shankar, S., Kelly, A. M., Gningue, S., & Rajaravivarma, R. (2009). A two-stage approach for contiguous sequential pattern mining. *Proceedings of the 2009 IEEE International Conference on Information Reuse and Integration* (pp. 382-387), Las Vegas, NV, United States. https://doi.org/10.1109/IRI.2009.5211583

[1] Chen, J., Shankar, S., Kelly, A. M., Gningue, S., & Rajaravivarma, R. (2009). An adaptive bottom-up clustering approach for web news extraction. *Proceedings of the Eighteenth Wireless and Optical Communications Conference* (pp. 1-5), Newark, NJ, United States. https://doi.org/10.1109/WOCC.2009.5312904

Invited Articles

[5] Kelly, A. M., Garland, C., Krakehl, R.,* Levy, E., Nehmeh, G.,* & Williams, T. (2024, Fall). PhysTEC/STEP UP in New York City: Facilitating teacher agency to promote diversity in physics. In J. Docktor (Ed.), *APS Forum on Education Newsletter.* American Physical Society. https://higherlogicdownload.s3.amazonaws.com/APS/379bd548-10a1-4054-aec2-911470db8df9/UploadedImages/24017F_FEd_Fall24-NL_UPDATED.pdf

[4] Kelly, A. M., & Bugallo, M. F. (2020, February 5). Undergraduate women in STEM: Strategies for retention. In S. Pasela (Ed.), *City University of New York – University Faculty Senate Blog (CUNY UFS).* http://www1.cuny.edu/sites/cunyufs/2020/02/05/undergraduate-women-in-stem-strategies-for-retention/

[3] Cohen, R.,* & Kelly, A. M. (2019, November 27). Predictors of student success in STEM. In S. Pasela (Ed.), *City University of New York – University Faculty Senate Blog (CUNY UFS).* https://www1.cuny.edu/sites/cunyufs/2019/11/27/predictors-of-student-success-in-stem/

[2] Sheppard, K., McCarthy, R., Kelly, A. M., & Drees, A. (2017, Summer). Stony Brook University physics teacher preparation program – The 6 "C"s. In R. Steinberg (Ed.), *APS Forum on Education Newsletter* (pp. 12-13). American Physical Society. https://www.aps.org/units/fed/newsletters/summer2017/stonybrook.cfm

[1] Bugallo, M. F., & Kelly, A. M. (2014, April). Electrical and computer engineering outreach at Stony Brook University. *The Pulse of Long Island IEEE Newsletter, 61*(4), 8-9. https://ieee.li/the-pulse-of-long-island/archive-history/

Invited Conference Proceedings

[3] Kelly, A. M. (in press). Psychosocial factors in secondary quantum information science and technology teaching and learning. *2025 American Institute of Physics Conference Proceedings Series*. *Physics Education Research Conference*. American Institute of Physics.

Invited Conference Proceedings (continued)

[2] Kelly, A. M. (2008). Inequities in physics access and enrollment in urban high schools. In C. Henderson, M. Sabella, & L. Hsu (Eds.), *2008 American Institute of Physics Conference Proceedings Series: Vol. 1064. Physics Education Research Conference* (pp. 30-33). American Institute of Physics.

[1] Kelly, A. M. (2007). Inequities in physics access for students in urban secondary schools. *Lay Language Paper Index of the 154th Acoustical Society of America Meeting*, New Orleans, LA, United States.

Book Chapters

[3] Kelly, A. M. (2013). Promoting the physical sciences among middle school urban youth through informal learning experiences. In M. S. Khine & S. M. Issa (Eds.), *Approaches and Strategies in Next Generation Learning Science* (pp. 184-204). IGI Global.

[2] DelliCarpini, M., Cutler, C., Gulla, A. N., Kelly, A. M., Shiller, J., & Smith, J. (2012). Teacher education that works: Collaboration between TESOL and content-based education faculty to better prepare future teachers. In A. Cohan & A. Honigsfeld (Eds.), *Breaking the Mold of Education for Culturally and Linguistically Diverse Students* (pp. 219-227). Rowman & Littlefield.

[1] Kelly, A. M. (2005). Integrating reading, language arts, and science. *Houghton Mifflin Science Professional Development Handbook: Grades 3 and 4* (pp. 51-64). Houghton Mifflin.

Position Papers

[2] Norris, L., & Kelly, A. M. (2013). Position statement of the National Alliance of Black School Educators on Physics First. Position paper published on the website of the *National Society of Black Physicists*. http://vector.nsbp.org/?s=national+alliance+of+black+school+educators&searchbutton=go%21

[1] Kelly, A. M. (2008). Issues of equity in physics access and enrollment. Position paper published on the *Public Policy Forum of the National Society of Black Physicists*. http://vector.nsbp.org/

Commissioned Research Report

[1] Kelly, A. M., Gningue, S., Chen, J., Shankar, S., & Rajaravivarma, R. (2009). *Research into outcomes and trends of NSF STEM education grants at the City University of New York*. Research report commissioned by the CUNY Office of Academic Affairs and Vice Chancellor Gillian Small (99 pages).

Manuscripts Under Review

[4] Lombardo, L.,* & Kelly, A. M. Undergraduate students' views of experimental physics: Exploring demographic and academic factors in remote asynchronous, studio, and traditional laboratories.

[3] Longo, L.,* & Kelly, A. M. Elementary teachers' science content preparation, self-efficacy, and NGSS-aligned instructional practices.

[2] Richards, Z.,* & Kelly, A. M. Astronomy identity framework for undergraduate majors and researchers. http://arxiv.org/abs/2410.00885

[1] Schlendorf, C.,* Kelly, A. M., & Krakehl, R.* School-level Earth science enrollment as a mediator of the relationship between student demographics and Earth science performance.

PROFESSIONAL HONORS – SCHOLARSHIP

Outstanding Referee Award, Physical Review Journals	2025
Denise D. Denton Best Paper Award, American Society for Engineering Ed., Women in Engineering Division	2019
Best Diversity Paper Award, American Society for Engineering Education, Women in Engineering Division	2018
Featured Article, September Issue of *Science Scope*	2017
Alumni Spotlight, Spring Issue of *Teachers College Mathematics, Science & Technology Newsletter*	2015
Featured Article, April Issue of *The Physics Teacher*	2011
Provost's Faculty Recognition Award for Excellence in Scholarship & Research, Lehman College, CUNY	2010
Editors' Choice Honors, Spring Issue of *Academic Exchange Quarterly*	2010
Salute to Scholars Certificate of Recognition, Chancellor of the City University of New York	2010
Faculty Fellowship Publication Program, City University of New York	2008-09

GRANT FUNDING

Multiple PI Awards – Stony Brook University ($6.22M as PI or Co-PI)

[18] National Science Foundation – Mathematics and Physical Sciences – $1,000,000 2024-25
National Quantum Virtual Laboratory (NQVL)
QSTD Pilot: SCY-QNet: Wide-Area Quantum Network to Demonstrate Quantum Advantage
[NSF 2410725]
PI: E. Figueroa; Co-PIs: H. Gupta, SBU; H. Tang, Yale U; M. Lipson, Columbia U; S. Will, Columbia U
Senior Personnel (education/workforce development plan): A. M. Kelly

[17] National Science Foundation – Division of Research on Learning – $99,992 2024-25
Innovative Technology Education for Students and Teachers (I-TEST)
International Year of Quantum Educational Research Conferences (IYQ Conferences)
[NSF 2414742]
PI: A. M. Kelly; Co-PIs: T. C. Wei, SBU; D. Schneble, SBU

[16] National Science Foundation – Division of Research on Learning – $1,499,999 2022-26
Innovative Technology Education for Students and Teachers (I-TEST)
Quantum Education for Students and Teachers (QuEST)
[NSF 2148467]
PI: A. M. Kelly; Co-PIs: T. C. Wei, SBU; D. Schneble, SBU; K. Culp, New York Hall of Science

[15] National Science Foundation – Division of Undergraduate Education – $299,950 2023-25
Improving Undergraduate STEM Education (I-USE)
Physics Transitions to Remote Adaptable Instruction in the Laboratory (PhysTRAIL)
[NSF 2142587]
PI: A. M. Kelly; Co-PI: K. Sheppard, SBU

[14] Physics Teacher Education Coalition (PhysTEC) of the American Physical Society – $14,952 2020-23
PhysTEC Regional Network of Southeast New York
PI: A. M. Kelly; Co-PI: K. Sheppard, SBU

[13] National Science Foundation – Division of Research on Learning – $1,193,776 2019-24
Innovative Technology Education for Students and Teachers (I-TEST)
Engineering Academy: Educating Engineers of the Future
[NSF 1850116]
PI: M. F. Bugallo, SBU; Co-PIs: A. M. Kelly, B. London-Thompson, SBU

[12] National Science Foundation – Division of Engineering Education and Centers – $99,781 2018-21
Research Experiences for Teachers (RET)
E^3: Excellence in Engineering Education
[NSF 1840953]
PI: M. F. Bugallo, SBU; Co-PI: A. M. Kelly

[11] National Science Foundation – Division of Engineering Education and Centers – $699,077 2017-22
Broadening Participation in Engineering (BPE)
ÉGALITÉ: Education, Guidance, Advancement, and Learning in Technology and Engineering
[NSF 1647405]
PI: M. F. Bugallo, SBU; Co-PIs: A. M. Kelly, R. Kukta, SBU

[10] SUNY Excels Performance Fund – $48,228 2018-20
Stony Brook Undergraduate Physics Teaching and Learning
PI: A. M. Kelly; Co-PI: R. McCarthy, SBU

[9] National Grid – $200,000 2016-20
National Grid/Next Generation Engineering Programs
PI: M. F. Bugallo, SBU; Co-PI: A. M. Kelly

[8] PSEG – $50,000 2016-19
Inspiring Engineering Learning
PI: M. F. Bugallo, SBU; Co-PI: A. M. Kelly

[7] Stony Brook University Parents' Fund for Excellence – $200,000 2014-19
Studio Physics at Stony Brook University
PI: A. M. Kelly; Co-PI: R. D. Bynum, SBU

Multiple PI Awards – Stony Brook University (continued)

[6] Center for Advanced Technology in Diagnostic Tools and Sensor Systems – $50,000 2016-18
National Grid/Next Generation Engineering Programs
PI: M. F. Bugallo, SBU; Co-PI: A. M. Kelly

[5] New York Campus Compact – AmeriCorps VISTA – $227,200 2014-18
Stony Brook/Community STEM Initiatives in Physics & Engineering
PI: A. M. Kelly; Co-PI: M. F. Bugallo, SBU

[4] National Science Foundation – Robert Noyce Scholarship Program – $749,487 2010-18
Robert Noyce Teacher Scholarship Program – Phase II
[NSF 1035314]
PI: K. Sheppard; Co-PIs: A. M. Kelly, L. Berger, SBU

[3] SUNY/New York Academy of Sciences STEM Mentoring Initiative – $139,514 2013-15
Stony Brook STEM Mentoring Initiative
[Sub-award from NSF 1223303]
PI: A. M. Kelly; Co-PI: M. F. Bugallo, SBU

[2] National Science Foundation – S-STEM Scholarship Program – $592,911 2009-15
Success and Diversity in Biological Sciences, Physical Sciences, and Geosciences
[NSF 0849783]
PI: A. M. Kelly; Co-PIs: D. Ferguson, R. Lacey, D. Knopf, SBU

[1] SUNY – Innovative Instructional Technology Grant – $52,000 2013-14
Exploring New Horizons: Science and Engineering Everywhere, At Anytime, For Everyone
PI: M. F. Bugallo, SBU; Co-PIs: A. M. Kelly, H. Tekai, SBU

Individual Awards – Stony Brook University ($28.4K)

[5] SUNY Research Seed Grant – $5,000 2020
Remote Undergraduate Physics and Engineering Laboratory Instruction: Transitions in Response to Mandated Social Isolation

[4] Departmental Technology Funds to Support Student Learning, Engagement, and Retention – $3,596 2019
Facilitating Collaboration in STEM Education

[3] Presidential Mini-Grant for Departmental Diversity – $3,100 2018-19
Women in Science and Engineering Speaker Series

[2] Stony Brook University Office of the President – $10,700 2014-16
Studio Physics Evaluation

[1] Stony Brook TALENT (Teaching and Learning Enhancements with New Technology) – $6,000 2014
Workshop Physics Educational Technology

Multiple PI Awards – Lehman College, CUNY ($4.10M)

[3] New York State Education Department Mathematics/Science Partnership Grant – $3,163,620 2010-13
Teacher Education for Advanced Science Preparation (TEASP)
PI: J. Rachlin, Lehman College; Co-PI: A. M. Kelly; Institutional Partner: New York City Department of Education

[2] National Science Foundation – Robert Noyce Scholarship Program – $870,400 2009-13
Mathematics and Science Teacher Education Renewal (MASTER) Program at Lehman College
[NSF 0833317]
PI: G. Qian, Lehman College; Co-PIs: A. M. Kelly, S. Gningue, L. Jones, Lehman College

[1] Office of Academic Affairs of the City University of New York – $65,000 2008-09
Research into Outcomes of NSF STEM Education Grants at the City University of New York
PIs: A. M. Kelly & J. Chen, Queens College; Co-PIs: S. Gningue, Lehman College; S. Shankar, Hunter College; R. Rajaravivarma, New York City College of Technology

Individual Awards – Lehman College, CUNY ($31.6K)

[5] Professional Staff Congress – City University of New York Faculty Grant – $2,925 2010-11
Second-Year Physics Teachers in Urban Secondary Schools: Isolation, Self-Efficacy, and Resilience

[4] Professional Staff Congress – City University of New York Faculty Grant – $5,600 2009-10
Physics Learning Opportunities in U.S. Urban High Schools

Individual Awards – Lehman College, CUNY (continued)

[3] George N. Shuster Fellowship – $1,530 2009-10
Science Teacher Retention in an Alternative Certification Track

[2] Responsive Research Network – Math Science Partnership (MSPinNYC) – $17,000 2008-09
Chemistry Teachers' Pedagogical Content Knowledge in a Summer Program for Urban High School Students
[Sub-award from NSF 0412413]

[1] Professional Staff Congress – City University of New York Faculty Grant – $4,500 2008-09
The Experiences of Underrepresented Minorities in Science-Themed Selective Urban High Schools

INVITED TALKS/COLLOQUIA (NATIONAL AND INTERNATIONAL)

[32] *Psychosocial Considerations in Precollege Learning of Quantum Information Science and Technology.* (2025, August). Physics Education Research Conference, Washington, DC, United States.

[31] *Quantum Information Science and Technology Outreach: Conceptual Progressions.* (2025, August). Summer Meeting of the American Association of Physics Teachers, Washington, DC, United States.

[30] Dwyer, K.,* & Kelly, A. M. (2025, February). *Researching Algebra Acceleration in Eighth Grade: Interest vs. Practicality.* Journal for Research in Mathematics Education (JRME) Talks Series.

[29] *The Quantum Information Science and Engineering (QISE) Education Continuum: Aligning Workforce Needs with Curriculum, Instruction, and Outreach*. (2025, January). NSF Expanding Quantum Information Science and Engineering (QISE) – First Annual Workshop, Little Rock, AR, United States.

[28] Richards, Z.,* & Kelly, A. M. (2025, January). *Astronomy Identity Framework for Undergraduate Students and Researchers.* 245th Winter Meeting of the American Astronomical Society, National Harbor, MD, United States.

[27] *Designing Quantum Information Science and Technology (QIST) Professional Learning*. (2024, February). National Q-12 Education Partnership Virtual Meeting.

[26] *Building a Logic Model: Quantum Education for Students and Teachers.* (2024, January). National Science Foundation and STEM Learning and Research Center, Arlington, VA, United States.

[25] Kelly, A. M. & Sheppard, K. (2023, March). *Building Effective Networks for Teacher Education.* Presentation at the Physics Teacher Education Coalition Conference [PhysTEC], Las Vegas, NV, United States. https://meetings.aps.org/Meeting/PHYSTC23/Session/1C.1

[24] *Quantum Education for Students and Teachers.* (2022, November). National Science Foundation I-TEST PI Meeting, Washington, DC, United States.

[23] *Epistemology and Communities of Practice in Traditional and Online, Hands-On Undergraduate Physics Laboratories.* (2021, April). April Meeting of the American Physical Society (APS Forum on Education and American Association of Physics Teachers), Sacramento, CA, United States.

[22] *Social Cognitive Perspective of Gender Disparities in Undergraduate Physics.* (2017, February). Winter Meeting of the American Association of Physics Teachers, Atlanta, GA, United States.

[21] Sheppard, K., McCarthy, R., Kelly, A. M., & Drees, A. (2017, February). *Physics Teacher Preparation at Stony Brook University*. Presentation at the Physics Teacher Education Coalition Conference [PhysTEC], Atlanta, GA, United States. Abstract published in *Bulletin of the American Physical Society, 62*(2).

[20] *Social Cognitive Perspective of Women's Participation in Physics: Improving Accessibility throughout the Pipeline.* (2017, January). April Meeting of the American Physical Society (Committee on the Status of Women in Physics), Washington, DC, United States. Abstract published in *Bulletin of the American Physical Society, 62*(1).

[19] *Recruiting, Retaining and Outreach to Underrepresented High School Teachers.* (2015, July). Summer Meeting of the American Association of Physics Teachers, College Park, MD, United States.

[18] *Physics Teachers' Perspectives on Factors that Affect Urban Physics Participation and Accessibility.* (2015, January). Winter Meeting of the American Association of Physics Teachers, San Diego, CA, United States.

[17] *Programmatic Impacts of Local Secondary STEM Policy.* (2012, September). The Council for Opportunity in Education's 31st Annual Conference, New York, NY, United States.

[16] *Identifying Pre-College STEM Opportunity to Learn.* (2012, September). The Council for Opportunity in Education's 31st Annual Conference, New York, NY, United States.

[15] *Teachers' Roles in Expanding Physics Participation Among Urban Students.* (2012, July). Summer Meeting of the American Association of Physics Teachers, Philadelphia, PA, United States.

Invited Talks (continued)

[14] *Equity Data on Secondary Physics in U.S. Schools: Urban and Suburban Perspectives.* (2012, February). Physics Teacher Education Coalition Conference [PhysTEC], Ontario, CA, United States.

[13] *Accessibility and Participation in Secondary Physics: Diverging Views of Physics Teachers and School Administrators.* (2011, September). Joint Annual Conference of the National Society of Black Physicists and the National Society of Hispanic Physicists, Austin, TX, United States.

[12] *Physics in Urban Secondary Schools: Preparing Teachers and Promoting Equity.* (2010, November). Chemistry & Physics Department, Chicago State University, Chicago, IL, United States.

[11] *The Challenges of Teaching Physics in Urban Secondary Schools.* (2010, September). Graduate School of Education, Rutgers University, New Brunswick, NJ, United States.

[10] Bradley, D. T., & Kelly, A. M. (2010, April). *Vassar College - Bronx Institute Acoustics Workshop for Low-Income, Ethnic Minority, Urban High School Students.* Presentation at the 159th Meeting of the Acoustical Society of America, Baltimore, MD, United States. Abstract published in *Journal of the Acoustical Society of America, 127*(3), 1946.

[9] *Teachers as Agents of Change in Transforming Urban Physics Education.* (2010, April). Physics Education Research Group, Florida International University, Miami, FL, United States.

[8] *Teaching Physics in Urban Schools: Challenges and Solutions for Broadening Participation.* (2010, February). Physics Teacher Education Coalition Conference [PhysTEC], Washington, DC, United States.

[7] *Issues and Challenges for Diversity in Physics from the K-12 Arena.* (2009, February). Physics Diversity Summit, Nashville, TN, United States.

[6] *Inequities in Physics Access and Enrollment in Urban High Schools*. (2008, July). Physics Education Research Conference, University of Edmonton, AB, Canada.

[5] *Activism Through Research: Inequitable Physics Access and Proposed Policy Reforms.* (2008, July). Plenary Bridging Session of the Annual Conference of the American Association of Physics Teachers and the Physics Education Research Conference, University of Edmonton, AB, Canada.

[4] *Urban Youth and Access to High School Physics: Issues, Inequities, and Policies.* (2008, February). Joint Annual Conference of the National Society of Black Physicists and the National Society of Hispanic Physicists, Washington, DC, United States.

[3] *No Child Left Behind, Diversity, and Access to K-12 Science.* (2008, February). The Physics Diversity Summit, Capitol Hill, Washington, DC, United States.

[2] *Inequities in Physics Access for Students in Urban Secondary Schools.* (2007, November). The 154th Meeting of the Acoustical Society of America, New Orleans, LA, United States. Abstract published in *Journal of the Acoustical Society of America, 122*(5), 2986-2987.

[1] *Issues of Equity in Physics Access and Enrollment in NYC Public High Schools.* (2007, June). The American Institute of Physics Advisory Liaison Committee on Underrepresented Minorities, The American Center for Physics, College Park, MD, United States.

Invited Regional, National, and International Conference Panel Participation

[10] *The Power of Intersectionality for Removing Barriers in STEM at Hispanic Serving Institutions.* (2024, April). CUNY Dominican Studies Institute at the City College of New York, NY, United States.

[9] *A Chemical Imbalance: Gender Underrepresentation in STEM.* (2023, January). Stony Brook University Department of Chemistry, Stony Brook, NY, United States.

[8] *Global Quantum Education.* (2023, September). Science Summit at the 78th United Nations General Assembly (UNGA78), New York, NY, United States.

[7] *Second Act: Faculty and Academics New to QIS Research Session*. (2023, September). Quantum Information Science Career Fair, Brookhaven National Laboratory, Upton, NY, United States.

[6] *Inaugural Undergraduate Research Day Panel on Physics Careers.* (2023, March). Society of Physics Students, Stony Brook University Department of Physics & Astronomy, Stony Brook, NY, United States.

[5] *How Communities Can Better Support Women in Physics.* (2017, January). American Physical Society April Meeting, Washington, DC, United States.

[4] *Engineering and Engineering Applications in STEM.* (2013, March). Brookhaven National Laboratory Career Advancement in a Research Environment (CARE) Conference, Upton, NY, United States.

[3] *Closing Session of the Physics Education Research Conference.* (2008, July). The Physics Education Research Conference, University of Edmonton, AB, Canada.

Invited Regional, National, and International Conference Panel Participation (continued)

[2] *Activism through Research: Inequitable Physics Access and Proposed Policy Reforms*. (2008, July). The Plenary Bridging Session of the Annual Conference of the American Association of Physics Teachers and the Physics Education Research Conference, University of Edmonton, AB, Canada.

[1] *Education in Acoustics: Professional Development for K-12 Science Teachers.* (2007, November). The 154th Meeting of the Acoustical Society of America, New Orleans, LA, United States.

INVITED TALKS/COLLOQUIA (REGIONAL)

[27] *Career Pathways for Women in Physics and Quantum Information Science and Technology.* (2024, December). Mechatronics Club, The Young Women's Leadership School (TYWLS) of Astoria, Queens, NY, United States.

[26] Kelly, A. M., & Ramakrishnan, C. R. (2024, December). *National Quantum Virtual Laboratory (NQVL) Workforce Development and Outreach.* National Quantum Virtual Laboratory Workshop, Columbia University, New York, NY, United States.

[25] *Quantum Information Science and Technology: Curricular Alignment and Academic and Career Opportunities.* (June, 2024). Eastern Suffolk Board of Cooperative Educational Services (BOCES), Patchogue, NY, United States.

[24] *Quantum Information Science and Technology: Emerging Discoveries and Academic and Career Opportunities.* (2024, May). Freeport Public Schools, Freeport, NY, United States.

[23] *Quantum Education Outreach for Precollege Students and Teachers.* (2023, November). Research in Quantum Computing and Networks Workshop, Department of Computer Science, College of Engineering and Applied Sciences, Stony Brook University, New York, NY, United States.

[22] *Sociocognitive Considerations of Women's Participation in STEM: Improving Accessibility throughout the Pipeline.* (2023, November). Cold Spring Harbor Women in Science and Engineering, Cold Spring Harbor, NY, United States.

[21] *Physics Education: Theory and Practice in Developing the Next Generation of Physicists.* (2023, September). Establishing Nature's Fundamental Particles Symposium, Department of Physics & Astronomy, College of Arts and Sciences, Stony Brook University, New York, NY, United States.

[20] *The Intersection of Theory and Practice: Research on Precollege and Undergraduate Students in Physics.* (2022, November). Stony Brook University Chapter of the Society of Physics Students, Stony Brook, NY, United States.

[19] *"STREAM" as a Means for Informing Values-Based Academic and Career Planning.* (2022, June). Commencement Address, St. Cassian School, Montclair, NJ, United States.

[18] *Access and Equity in the Physics Education Pipeline.* (2021, November). Department of Physics & Astronomy Colloquium Series, Stony Brook University, Stony Brook, NY, United States.

[17] *Women's Sense of Belonging in Physics.* (2019, October). Diversity Committee, Department of Physics & Astronomy, College of Arts and Sciences, Stony Brook University, New York, NY, United States.

[16] *Next Generation Science Standards: Broadening Opportunities for the Integration of Science and Engineering Education in K-12 Schools.* (2018, May). Department of Technology & Society, College of Engineering and Applied Sciences, Stony Brook University, Stony Brook, NY, United States.

[15] Kelly, A. M., & London, B. (2018, March). *Research in Engineering Education.* Engineering Education for a Technology-Driven Society Conference, College of Engineering and Applied Sciences, Stony Brook University, Stony Brook, NY, United States.

[14] *Physics Education as an Interdisciplinary Career: Pathways and Challenges.* (2017, November). Women in Science and Engineering Program, William Paterson University, Wayne, NJ, United States.

[13] *Cultural and Institutional Challenges in Improving Undergraduate Physics Instruction.* (2017, November). Annual Meeting of the American Physical Society Mid-Atlantic Section, Newark, NJ, United States. Abstract published in *Bulletin of the American Physical Society, 62*(19).

[12] *Equitable Participation in Physics: Improving Accessibility through the Pipeline.* (2016, July). Collegiate Science and Technology Entry Program, Stony Brook University, Stony Brook, NY, United States.

[11] *A Sociocognitive Perspective of Women's Participation in Physics: Improving Accessibility throughout the Pipeline.* (2016, January). Barnard College Robert Noyce Teacher Education Scholar Program STEM Colloquium, Barnard College, New York, NY, United States.

Regional Invited Talks/Colloquia (continued)

[10] Kelly, A. M., & London, B. (2014, July). *Diversity and Inclusive Teaching.* STEM Teaching Summer Institute, Stony Brook University, Stony Brook, NY, United States.

[9] Kelly, A. M., Nehm, R., & Sheppard, K. (2014, July). *Prior Knowledge in STEM: Implications for Teaching and Learning.* STEM Teaching Summer Institute, Stony Brook University, Stony Brook, NY, United States.

[8] *The Intersection of Physics and Education: Implications for Research and Teaching.* (2014, April). The Society of Physics Students, Stony Brook University, Stony Brook, NY, United States.

[7] *Physics Education as an Interdisciplinary Career and Research Field.* (2014, January). East Coast Conference on Undergraduate Women in Physics, Stony Brook University, Stony Brook, NY, United States.

[6] *Active Learning and Instructional Reforms in the Physics Classroom.* (2013, December). Department of Physics & Astronomy Colloquium Series, Stony Brook University, Stony Brook, NY, United States.

[5] *Equity Data on Secondary Physics in U.S. Schools: Urban and Suburban Perspectives.* (2013, March). Women in Science & Engineering, Stony Brook University, Stony Brook, NY, United States.

[4] *Elementary Science Education: Preparing Students for 21st Century Innovation.* (2013, January). Harbor Country Day School, Stony Brook, NY, United States.

[3] *Secondary Physics in U.S. Schools: Urban and Suburban Perspectives.* (2011, November). World of Physics Colloquium Series, Stony Brook University, Stony Brook, NY, United States.

[2] *Physics in Secondary Schools: Research on Factors Impacting Accessibility.* (2011, March). Department of Physics & Astronomy Colloquium, Stony Brook University, Stony Brook, NY, United States.

[1] *Models of Pedagogical Content Knowledge in an Urban Summer Chemistry Program.* (2008, November). The Responsive Research Network, Hunter College, City University of New York, New York, NY, United States.

PEER REVIEWED NATIONAL AND INTERNATIONAL CONFERENCE PAPERS (UNPUBLISHED)

[82] Darienzo, M.,* Kelly, A. M., Wei, T. C., & Schneble, D. (2025, March). *Qualitative Analysis of Precollege Teachers' Attitudes Towards Teaching Quantum Information Science and Technology* [Paper presentation]. National Association of Research in Science Teaching, Washington, DC, United States.

[81] DeLaCruz, R.,* Kelly, A. M., Wei, T. C., Schneble, D., & Darienzo, M.* (2025, March). *Measuring High School Student Knowledge of Quantum Information Science and Technology in University-Based Outreach* [Paper presentation]. National Association of Research in Science Teaching, Washington, DC, United States.

[80] Longo, L.,* & Kelly, A. M. (2025, March). *Primary and Intermediate Elementary Teacher Background and Confidence in NGSS Implementation* [Paper presentation]. National Association of Research in Science Teaching, Washington, DC, United States.

[79] Schlendorf, C.,* Kelly, A. M., & Krakehl, R.* (2025, March). *Earth Science Access, Performance, and Equity* [Poster presentation]. National Science Teaching Association, Philadelphia, PA, United States.

[78] Steigerwald, J.,* & Kelly, A. M. (2025, March). *Policy Analysis of Middle School Science Acceleration and High School Science Outcomes* [Paper presentation]. National Association of Research in Science Teaching, Washington, DC, United States.

[77] Zinn, A.,* Kelly, A. M., Wei, T. C., Schneble, D., & Darienzo, M.* (2025, March). *Teacher Knowledge of Quantum Information Science and Technology and Pedagogical Self-Efficacy* [Paper presentation]. National Association of Research in Science Teaching, Washington, DC, United States.

[76] Chatham, E.,* & Kelly, A. M. (2024, March). *Leveraging Instructional Routines to Facilitate NGSS Implementation in High School Science* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[75] Cioffi, C.,* & Kelly, A. M. (2024, March). *Racial and Socioeconomic School District Segregation and Secondary Science Outcomes* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[74] Darienzo, M.,* Kelly, A. M., Wei, T. C., & Schneble, D. (2024, March). *Professional Development for Improving Precollege Teachers' Attitudes Towards Teaching Quantum Information Science and Technology* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[73] Hatzfeld. J.,* Krakehl, R.,* Kelly, A. M., & Licht, Z.* (2024, March). *Physical Science Coursetaking, Performance, Socioeconomic Status, and Graduation Rates* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

National and International Conference Papers (continued)

[72] Kelly, A. M., Darienzo, M.,* Wei, T. C., & Schneble, D. (2024, March). *Improving High School Students' Attitudes Towards Quantum Information Science and Technology in a Summer Program* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[71] Lombardo, L.,* & Kelly, A. M. (2024, March). *Undergraduate Students' Views of Experimental Physics in Remote and In-Person Laboratories* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[70] Palermo, M.,* Kelly, A. M., Krakehl, R.,* & Khosla, P.† (2024, March). *Students, Teacher, and School-Level Predictors of AP Chemistry Performance in U.S. High Schools* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[69] Perret, B., Ragusa, G., Tofel-Grehl, C., Hansen, T., Colston, N., Asino, T., Chandrasekara, T., Flanagan, C., Gallay, E., Pykett, A., Diemer, M., Berdelli, E., Rafanan, K., Zhang, H., Shah, S. A., Phatak, J., Barnett, M., Kelly, A. M., Wei, T. C., & Schneble, D. (2024, March). *Building Culturally Sustaining Projects and Partnerships to Support Science for the "Rest of Us"* [Symposium]. National Association of Research in Science Teaching, Denver, CO, United States.

[68] Schlendorf, C.,* Kelly, A. M., & Krakehl, R.* (2024, March). *School-Level Earth Science Enrollment as a Mediator of Demographic Predictors of Earth Science Performance* [Poster presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[67] Siepsiak, M.,* Sheppard, K., & Kelly, A. M. (2024, March). *Re-Evaluating the Impact of School Size on Students' Physical Science Enrollment and Performance* [Poster presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[66] Snell, L.,* & Kelly, A. M. (2024, March). *Elementary Teacher Background and Confidence in Science Content, Crosscutting Concepts, and Science and Engineering Practices* [Paper presentation]. National Association of Research in Science Teaching, Denver, CO, United States.

[65] Chatham, E.,* & Kelly, A. M. (2024, January). *Leveraging Co-Design to Facilitate NGSS Curricular Development and Implementation* [Paper presentation]. Association of Science Teacher Education, New Orleans, LA, United States.

[64] Hatzfeld, J.,* Kelly, A. M., & Krakehl, R.* (2024, January). *Longitudinal Analysis of Novice Physics Teacher Growth and Student Performance* [Paper presentation]. Association of Science Teacher Education, New Orleans, LA, United States.

[63] Sheppard, K., & Kelly, A. M. (2024, January). *Developing STEM Teacher-Authors in the New York State Master Teacher Program* [Paper presentation]. Association of Science Teacher Education, New Orleans, LA, United States.

[62] Dwyer, K.,* & Kelly, A. M. (2023, October). *Algebra Acceleration in 8th Grade and Students' Mathematics Outcomes in High School* [Paper presentation]. National Council of Teachers of Mathematics, Washington, DC, United States.

[61] Krakehl, R.,* & Kelly, A. M. (2023, October). *Intersectional Quantitative Analysis of AP Mathematics Enrollment and Performance* [Paper presentation]. National Council of Teachers of Mathematics, Washington, DC, United States.

[60] Gatz, J.,* Kelly, A. M., & Bugallo, M. (2022, March). *Influence of Active Goals on Attitudes, Intentions, and Academic Behaviors of STEM Women in an Undergraduate Peer Mentoring Program* [Paper presentation]. National Association of Research in Science Teaching, Vancouver, BC, Canada.

[59] Kelly, A. M., & Bugallo, M. F. (2022, March). *Cognitive Load, Transfer, and Instructional Decision Making in Middle School STEM Integration* [Paper presentation]. National Association of Research in Science Teaching, Vancouver, BC, Canada.

[58] Krakehl, R.,* Palermo, M.,* & Kelly, A. M. (2022, March). *Intersectional Analysis of Advanced Placement Chemistry Participation and Performance by Gender and Ethnicity* [Paper presentation]. National Association of Research in Science Teaching, Vancouver, BC, Canada.

[57] Palermo, M.,* Kelly, A. M., & Krakehl, R.* (2022, March). *Chemistry Teacher Retention, Migration, and Attrition* [Paper presentation]. National Association of Research in Science Teaching, Vancouver, BC, Canada.

[56] Richards, Z.,* & Kelly, A. M. (2022, March). *Predictors of Community College Astronomy Performance* [Paper presentation]. National Association of Research in Science Teaching, Vancouver, BC, Canada.

National and International Conference Papers (continued)

[55] Rosen, D.,* & Kelly, A. M. (2022, March). *Student Participation and Communities of Practice in Remote Undergraduate Physics Laboratories* [Paper presentation]. National Association of Research in Science Teaching, Vancouver, BC, Canada.

[54] Schlendorf, C.,* Kelly, A. M., & Krakehl, R.* (2022, March). *Equity Considerations in Earth Science Out-of-Field Teaching and Student Performance* [Paper presentation]. National Association of Research in Science Teaching, Vancouver, BC, Canada.

[53] Christian, K.,* Kelly, A. M., & Bugallo, M. F. (2020, March). *NGSS Teacher Professional Development to Implement Engineering Practices in Science Instruction* [Paper presentation]. National Association of Research in Science Teaching, Portland, OR, United States.**

[52] Gatz, J.,* Kelly, A. M., & Bugallo, M. F. (2020, March). *How Do the Social Structures of a Peer Mentoring Program Relate to Achievement Goals and Persistence for Female Undergraduate STEM Majors?* [Paper presentation]. National Association of Research in Science Teaching, Portland, OR, United States.**

[51] Gearns, R.,* Kelly, A. M., & Bugallo, M. F. (2020, March). *School Counseling and the Preparation of Pre-College Students for STEM Careers* [Paper presentation]. National Association of Research in Science Teaching, Portland, OR, United States.**

[50] Krakehl, R.,* Kelly, A. M., Sheppard, K., & Padwa, L.* (2020, March). *Out-of-Field Physics Teaching in Urban, Suburban, and Rural Contexts* [Paper presentation]. National Association of Research in Science Teaching, Portland, OR, United States.**

[49] Palermo, M.,* Krakehl, R.,* Kelly, A. M., & Sheppard, K. (2020, March). *Physics Teacher Isolation, Contextual Characteristics, and Physics Achievement* [Paper presentation]. National Association of Research in Science Teaching, Portland, OR, United States.**

[48] Rosen, D.,* Kelly, A. M., & Hemmick, T. (2020, March). *Students' Epistemological Views of Socialization and Teacher Support in the Undergraduate Physics Laboratory* [Paper presentation]. National Association of Research in Science Teaching, Portland, OR, United States.**

[47] Kelly, A. M., O'Connell, C., Gatz, J.,* & Bugallo, M. F. (2019, August). *Graduate Women's Leadership Development in Science and Engineering: A Workshop Model* [Paper presentation]. European Science Education Research Association Conference, Bologna, Italy.

[46] Sheppard, K., & Kelly, A. M. (2019, August). *Access to Elite Public Science High Schools in the U.S.: Opportunity, Disparate Impact, and Equal Protection* [Paper presentation]. European Science Education Research Association Conference, Bologna, RE, Italy.

[45] Slagus, L. M.,* & Kelly, A. M. (2019, August). *Urban Advantage: A Professional Development Partnership between Urban Middle Schools and Informal Science Institutions* [Poster presentation]. European Science Education Research Association Conference, Bologna, RE, Italy.

[44] Cohen, R.,* & Kelly, A. M. (2019, April). *Community College Chemistry Coursetaking and STEM Academic Persistence* [Paper presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[43] McHugh, L.,* Kelly, A. M., & Sheppard, K. (2019, April). *Graphing as a Means to Improve Middle School Science Understanding and Affective Domains* [Paper presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[42] Padwa, L.,* Sheppard, K., Kelly, A. M., Rushton, G. T. (2019, April). *Location, Location, Location… A Study of Chemistry Teachers in New York State* [Poster presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[41] Rushton, G. T., Padwa, L.,* Sheppard, K., & Kelly, A. M. (2019, April). *Professional Age of Isolated Teachers as a Mediator of Chemistry Performance in High Needs Schools* [Paper presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[40] Wortel-London, S. B.,* & Kelly, A. M. (2019, April). *'They Did Not Expect Me to Be a Scientist': Informal Service Learning's STEM Identity Impact* [Paper presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[39] Gatz, J.,* & Kelly, A. M. (2018, April). *Predictors of Science Achievement in a Suburban Middle School: Addressing Trends in the Leaky STEM Pipeline in Early Adolescence* [Poster presentation]. American Educational Research Association, New York, NY, United States.

**Conference cancelled due to pandemic in 2020-21; presentations archived through conference website.

National and International Conference Papers (continued)

[38] Nehmeh, G.,* & Kelly, A. M. (2018, April). *Self-Determination of Women as Underrepresented Minorities in Undergraduate Physical Science* [Roundtable session]. American Educational Research Association, New York, NY, United States.

[37] Sasway, H. M.,* & Kelly, A. M. (2018, January). *Community College Students' Interest and Motivation to Study Science* [Roundtable session]. Association of Science Teacher Education, Baltimore, MD, United States.

[36] Slagus, L. M.,* & Kelly, A. M. (2018, January). *The Impact of the Urban Advantage Initiative on Middle School Science Teachers* [Poster presentation]. Association of Science Teacher Education, Baltimore, MD, United States.

[35] Kelly, A. M., & Nehmeh, G.* (2017, August). *Physics Teacher Isolation in Urban Schools* [Paper presentation]. European Science Education Research Association Conference, Dublin, Ireland.

[34] Nehmeh, G.,* & Kelly, A. M. (2017, August). *Primary and University Academic Experiences of Career Women Physicists* [Poster presentation]. European Science Education Research Association Conference, Dublin, Ireland.

[33] Gatz, J.,* & Kelly, A. M. (2017, May). *Dose Response Effect of Physical Activity and Behavioral Regulation Measures on the Science Achievement of At-Risk Middle School Girls* [Poster presentation]. American College of Sports Medicine, Boston, MA, United States. Abstract published in *Medicine and Science in Sports and Exercise, 49*(5S), 210.

[32] Gatz, J.,* & Kelly, A. M. (2017, April). *Middle School Girls' Science Achievement and Cognition: Effects of an After School Informal Science Program* **[**Poster presentation]. National Association of Research in Science Teaching, San Antonio, TX, United States.

[31] Gearns, R.,* Kelly, A. M., & Bugallo, M. F. (2017, April). *Shifts in Students' Views Towards Engineering in an Out-of-School-Time Program* [Poster presentation]. National Association of Research in Science Teaching, San Antonio, TX, United States.

[30] Mintz, J.,* & Kelly, A. M. (2017, April). *Science Teacher and Administrator Perspectives of Teacher Evaluation Systems* [Poster presentation]. National Association of Research in Science Teaching, San Antonio, TX, United States.

[29] O'Brien, S.,* & Kelly, A. M. (2017, April). *Master Teachers' Topic-Specific Pedagogical Content Knowledge (TSPCK) of Electrochemistry* [Paper presentation]. National Association of Research in Science Teaching, San Antonio, TX, United States.

[28] Sasway, H. M.,* & Kelly, A. M. (2017, April). *Factors that Influence Community College Students' Interest in Science Coursework* [Paper presentation]. National Association of Research in Science Teaching, San Antonio, TX, United States.

[27] Wortel-London, S. B.,* & Kelly, A. M. (2017, April). *'I Like STEM, But Am I a STEM Person?' Effects of Informal Learning and Mentors on STEM Identity* [Paper presentation]. National Association of Research in Science Teaching, San Antonio, TX, United States.

[26] Gatz, J.,* & Kelly, A. M. (2016, June). *Effects of Aerobic Exercise on Cognition and Science Achievement in Middle School Girls* [Poster presentation]. American College of Sports Medicine, Boston, MA, United States. Abstract published in *Medicine and Science in Sports and Exercise, 48*(5S), 1050.

[25] Gatz, J.,* & Kelly, A. M. (2016, April). *Middle School Girls' Science Motivation and Performance: Cognitive Effects of an Out-of-School-Time Program* [Paper presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[24] Wortel-London, S. B.,* Kelly, A. M., & Groome, M. (2016, April). *Recruiting STEM Graduate Students for K-12 Education: Development of an Instrument for Identifying Candidates* [Paper presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[23] Gatz, J.,* Kelly, A. M., Nehm, R., & Ha, M. (2015, May). *Middle School Girls' Science Attitudes and Performance: Cognitive Effects of Extracurricular Participation in Aerobic Training* [Poster presentation]. American College of Sports Medicine, San Diego, CA, United States. Abstract published in *Medicine and Science in Sports and Exercise, 48*(5S), 735. https://www.doi.org/10.1249/01.mss.0000478736.43325.9f

[22] Bugallo, M. F., Kelly, A. M., & Ha, M. (2015, April). *Research on Impacts of an Electrical Engineering Summer Program for High School Students* [Paper presentation]. National Association of Research in Science Teaching, Chicago, IL, United States.

National and International Conference Papers (continued)

[21] Silvernail, D., Macdonald, M., Johnson, A., Contino, J., Cooke-Nieves, N., Kelly, A. M., Gupta, P., Fayne, H., & Wallace, J. (2015, April). *When the Informal Becomes Formal in the Higher Education Preparation of Science Teachers* [Symposium]. National Association of Research in Science Teaching, Chicago, IL, United States.

[20] Turner-Edwards, M.,* Kelly, A. M., & Sheppard, K. (2015, April). *Science Teacher Certification, Access to Science, and Student Learning in an Urban Setting* [Poster presentation]. National Association of Research in Science Teaching, Chicago, IL, United States.

[19] Hantz, C.,* & Kelly, A. M. (2014, March). *Earth Science Curricular Reform in Secondary Education: A Systems-Based Approach* [Paper presentation]. National Association of Research in Science Teaching, Pittsburgh, PA, United States.

[18] Kiely, J.,* Kelly, A. M., La Magna, K., Moloney, D. J., & Bynum, R. D. (2014, March). *Research on Impacts of University-Based Biotechnology Teaching Laboratories on Teacher Professional Development and Student Outcomes* [Paper presentation]. National Association of Research in Science Teaching, Pittsburgh, PA, United States.

[17] McHugh, L.,* & Kelly, A. M. (2014, March). *Impacts of a Middle School Mathematics-Science Integration Program* [Paper presentation]. National Association of Research in Science Teaching, Pittsburgh, PA, United States.

[16] Kelly, A. M., & Sheppard, K. (2014, January). *Physics Coursetaking, Teacher Recruitment, and Resource Allocation: Implications for Policy and Practice* [Paper presentation]. Association of Science Teacher Education, San Antonio, TX, United States.

[15] Kiely, J.,* Kelly, A. M., La Magna, K., Moloney, D., & Bynum, R. D. (2014, January). *Biotechnology Teaching Laboratories: University Outreach for Science Teacher Professional Development and Advanced STEM Learning* [Paper presentation]. Association of Science Teacher Education, San Antonio, TX, United States.

[14] Qian, G., Kelly, A. M., & Gningue, S. M. (2012, April). *Understanding Noyce Scholars' Epistemological Beliefs about Teaching and Learning Science and Mathematics* [Paper presentation]. American Educational Research Association, Vancouver, BC, Canada.

[13] Kelly, A. M. (2012, March). *Science Teachers' Views of Factors that Affect Urban Physics Accessibility and Participation* [Paper presentation]. National Association of Research in Science Teaching, Indianapolis, IN, United States.

[12] Macdonald, M. B., Kelly, A. M., Aquino-Gerard, A. E., & Bayne, G. U. (2011, April). *Why Are We Sharing our Teachers? Urban Museum and University Preparing Urban Science Teachers* [Roundtable session]. American Educational Research Association, New Orleans, LA, United States.

[11] Kelly, A. M., Riccio, J. F., & Baldwin, B. C. (2011, January). *Developing a Framework for Evaluating Teachers' Content Knowledge throughout Participation in Math-Science Partnerships in Two States* [Paper presentation]. Association of Science Teacher Education, Minneapolis, MN, United States.

[10] Kelly, A. M., & Smith, J. (2010, May). *Science Education and TESOL: A Collaborative Professional Development Model for Alternative Certification Teacher Induction* [Roundtable session]. American Educational Research Association, Denver, CO, United States.

[9] Gonzalez, C.,¶ & Kelly, A. M. (2010, March). *A Case Study of Secondary Science Teacher Career Satisfaction and Retention in an Alternative Certification Program* [Paper presentation]. National Association of Research in Science Teaching, Philadelphia, PA, United States.

[8] Kelly, A. M., Gningue, S. M., Chen, J., Shankar, S., & Rajaravivarma, R. (2010, March). *Trends and Outcomes of NSF STEM Education Grants at the City University of New York: Implications for Policy, Practice, and Future Initiatives* [Paper presentation]. National Association of Research in Science Teaching, Philadelphia, PA, United States.

[7] Kelly, A. M., Leventhal, A.,¶ & Marcinowski Slagus, L.¶ (2009, April). *Pedagogical Content Knowledge in High School Chemistry: Teacher Efficacy, High Stakes Standardized Testing, and Student Outcomes* [Paper presentation]. National Association of Research in Science Teaching, Garden Grove, CA, United States.

[6] Sheppard, K., & Kelly, A. M. (2009, April). *The Small Schools Movement and its Impact on Physics Education in New York City* [Paper presentation]. National Association of Research in Science Teaching, Garden Grove, CA, United States.

National and International Conference Papers (continued)

[5] Kelly, A. M., & Sheppard, K. (2008, March). *Construction of a Latent Variable to Predict Physics Access in U.S. Urban High Schools* [Paper presentation]. National Association of Research in Science Teaching, Baltimore, MD, United States.

[4] Sheppard, K., & Kelly, A. M. (2008, March). *The Small Schools Movement in New York City and its Impact on Physics Education* [Roundtable session]. American Educational Research Association, New York, NY, United States.

[3] Kelly, A. M. (2006, April). *Factors that Influence the Opportunity to Study Physics in New York City High Schools* [Paper presentation]. National Association of Research in Science Teaching, San Francisco, CA, United States.

[2] Kelly, A. M. (2006, April). *Restructured Secondary Schools and Access to Science: The Case of Physics in New York City* [Roundtable session]. American Educational Research Association, San Francisco, CA, United States.

[1] Kelly, A. M. (2005, April). *Newton in the Big Apple: Physics Enrollment in New York City High Schools* [Paper presentation]. National Association of Research in Science Teaching, Dallas, TX, United States.

PEER REVIEWED NATIONAL CONFERENCE PRESENTATIONS

National and International Conference Presentations

[32] Kelly, A. M., Schneble, D., Wei, T. C., Darienzo, M.,* & DeLaCruz, R.* (2025, March). *Relationship between Precollege Students' Attitudes and Conceptual Knowledge in Quantum Information Science & Technology Outreach*. American Physical Society Global Summit, Anaheim, CA, United States.

[31] Colon, A.,† Wang, X.,† Wei, T. C., Schneble, D., & Kelly, A. M. (2025, January). *Teaching Bell's Inequality in Precollege Quantum Education.* American Association of Physics Teachers, St. Louis, MO, United States.

[30] DeLaCruz, R.,* Schneble, D., Kelly, A. M., & Wei, T. C., (2025, January). *Teaching Polarization and Interference with the Mach-Zehnder Interferometer in Precollege Quantum Education.* American Association of Physics Teachers, St. Louis, MO, United States.

[29] Kelly, A. M., Wei, T. C., Schneble, D., & Darienzo, M.* (2024, July). *Cognitive and Affective Experiences of Precollege Women in Quantum Information Science and Technology Outreach.* Network Gender & STEM Conference, Heidelberg University, Baden-Württemberg, Germany.

[28] Kelly, A. M., & Sheppard, K. (2024, June). *Graduate Teaching Assistant Preparation and Experiences in Remote and In-Person Physics Laboratory Instruction.* National Science Foundation I-USE PI Meeting, Washington, DC, United States.

[27] Kelly, A. M., Wei, T. C., Schneble, D., & Darienzo, M.* (2024, May). *Cognitive and Affective Experiences of Precollege Students in Quantum Information Science and Technology Outreach.* National Science Foundation I-TEST PI Meeting, Alexandria, VA, United States.

[26] Kelly, A. M., Schneble, D., Wei, T. C., & Darienzo, M.* (2024, March). *Conceptual and Mathematical Challenges in Precollege Quantum Information Science & Technology Outreach.* American Physical Society March Meeting, Minneapolis, MN, United States. https://meetings.aps.org/Meeting/MAR24/Session/Q61.6

[25] Kelly, A. M., & Torpey, L.† (2024, March). *Instructor and Student Interactions in Remote and Traditional Undergraduate Physics Laboratories.* American Physical Society March Meeting, Minneapolis, MN, United States. https://meetings.aps.org/Meeting/MAR24/Session/J00.121

[24] Kelly, A. M., Schneble, D., Wei, T. C., & Darienzo, M.* (2024, January). *Development of a Quantum Information Science and Technology Concept Inventory.* American Association of Physics Teachers, New Orleans, LA, United States. https://aapt-wm.secure-platform.com/a/solicitations/66/sessiongallery/2798

[23] Richards, Z.,* & Kelly, A. M. (2024, January). *Why Do Students Choose to Study Astronomy?* 243rd Winter Meeting of the American Astronomical Society, New Orleans, LA, United States.

[22] Kelly, A. M., Sheppard, K., & Rosen, D.* (2023, June). *Student and Teacher Interactions in Traditional and Remote Undergraduate Physics Laboratories.* Transforming Institutions Conference, Minneapolis, MN, United States.

[21] Krakehl, R.,* Kelly, A. M., Palermo, M.,* Sheppard, K., & Padwa, L.* (2023, March). *A Synopsis of New York State Physics Education: People, Places, and Problems.* Physics Education Research Conference, Las Vegas, NV, United States. https://meetings.aps.org/Meeting/PHYSTC23/Session/K01.7

National and International Conference Presentations (continued)

[20] Richards, Z.,* & Kelly, A. M. (2022, June). *Exploring Predictors of Community College Performance.* 240th Meeting of the American Astronomical Society, Pasadena, CA, United States.

[19] Kelly, A. M., Krakehl, R.,* & Khosla, P.† (2022, April). *Student and Teacher-Level Predictors of Advanced Placement Physics Performance.* American Physical Society April Meeting, New York, NY, United States. Abstract published in the *Bulletin of the American Physical Society.* https://meetings.aps.org/Meeting/APR22/Session/Z05.3

[18] Kelly, A. M., & Krakehl, R.* (2021, August). *Widening the Gap: Intersectional Analysis of Advanced Placement Physics Participation and Performance by Gender and Ethnicity.* Physics Education Research Conference, Washington, DC, United States.

[17] Krakehl, R.,* & Kelly, A. M. (2021, August). *Science and Mathematics Predictors of Precollege Physics Equity, Access, and Performance.* Physics Education Research Conference, Washington, DC, United States.

[16] Palermo, M.,* Kelly, A. M., & Krakehl, R.* (2021, August). *Physics Teacher Retention, Attrition, and Migration.* Physics Education Research Conference, Washington, DC, United States.

[15] Sherwood, K.,* Kelly, A. M., & Bugallo, M. F. (2021, July). *Generative Leadership Development in a Peer Mentoring Program for Undergraduate Women in STEM.* Gender & STEM Network 2020 Conference, Sydney, New South Wales, Australia.

[14] Kelly, A. M., & Sheppard, K. (2021, March). *The PhysTEC Regional Network of Southeast New York.* Physics Teacher Education Coalition Conference [PhysTEC] Virtual Conference.

[13] Kelly, A. M., Sheppard, K., Krakehl, R.,* Padwa, L.,* & Palermo, M.* (2021, January). *Analyzing Physics and Chemistry Education in U.S. Schools with State-Level Data Sets*. Korean Association for Science Education International Conference, Seoul, South Korea.

[12] Krakehl, R.,* Kelly, A. M., & Sheppard, K., & Palermo, M.,* (2020, July). *All Alone: Physics Teacher Isolation and Student Performance.* NSF Online Workshop on the Physics of Living Systems: Building a Network to Support and Improve High School Physics Education, Harvard University, Cambridge, MA, United States.

[11] Rosen, D.,* & Kelly, A. M. (2020, July). *Epistemological, Socialization, and Help Seeking Views in Traditional and At-Home Undergraduate Physics Laboratories.* Physics Education Research Conference, Grand Rapids, MI, United States.

[10] Rosen, D.,* & Kelly, A. M. (2020, July). *Rethinking the Value of Undergraduate Physics Laboratory Work.* American Association of Physics Teachers Conference, Grand Rapids, MI, United States.

[9] Kelly, A. M. (2018, February). *Women in Science and Engineering (WISE): Undergraduate Academic Excellence through Curriculum, Service, Research, and Mentoring.* Science and Engineering for Social Good Conference, hosted by the National Center for Science and Civic Engagement, Atlanta, GA, United States.

[8] Sheppard, K., Kelly, A. M., Padwa, L.,* Gough, C.,* Millman, K., & Vessalico, C. (2014, June). *Noyce Master Teachers in Science Methods Classes.* National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC, United States.

[7] Sheppard, K., & Kelly, A. M. (2013, May). *A Qualitative and Quantitative Analysis of Physical Science Accessibility in High Needs Schools.* National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC, United States.

[6] Smith, D., Rosa, K., Denisova, K., & Kelly, A. M. (2012, July). *Teaching Physics in Urban Schools.* Summer Meeting of the American Association of Physics Teachers, Philadelphia, PA, United States.

[5] Sheppard, K., & Kelly, A. M. (2012, May). *Physics and Chemistry Offerings in New York State: Enrollment, Policy, and Needs.* National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC, United States.

[4] Kelly, A. M., Gningue, S. M., Soriano, J.,¶ Hanson, K.,¶ Pantojas, N.,¶ & Abreu, R.¶ (2011, July). *Noyce Scholars' Reflections on Teaching in High-Poverty Urban Schools: Challenges and Strategies.* National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC, United States.

[3] Sheppard, K., & Kelly, A. M. (2011, July). *Suburban Science Education.* National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC, United States.

[2] Qian, G., Kelly, A. M., Soriano, J.,¶ Maras, M.,¶ & Brown, W.¶ (2010, July). *Scientists in Action: Learning and Teaching Mathematics and Science by Using Community Resources.* National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC, United States.

National and International Conference Presentations (continued)

[1] Kelly, A. M., & Qian, G. (2009, July). *Mathematics and Science Teacher Education Renewal (MASTER) Program at Lehman College.* National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC, United States.

Local and Regional Conference Presentations

[19] Kelly, A. M., Schneble, D., & Wei, T. C. (2025, March). *Precollege Quantum Education for Students and Teachers.* SUNY Research Expo, Albany, NY, United States.

[18] Kelly, A. M., Wei, T. C., & Schneble, D. (2024, September). *Factor Analysis of Science Teacher Self-Efficacy in Teaching Quantum Information Science & Technology.* Northeast Association of Science Teacher Education, SUNY New Paltz, New Paltz, NY, United States.

[17] Kelly, A. M., Wei, T. C., Schneble, D. (2023, September). *Developing Science Teacher Knowledge in Quantum Information Science & Technology.* Northeast Association of Science Teacher Education, SUNY Cortland, Cortland, New York, NY, United States.

[16] Sheppard, K., & Kelly, A. M. (2023, September). *Building Effective Science Teacher Education Networks: Reciprocity Among Stakeholders in Southeastern New York.* Northeast Association of Science Teacher Education, SUNY Cortland, Cortland, New York, NY, United States.

[15] Sasway, H. M.,* & Kelly, A. M. (2016, October). *Student Interest in Community College Biology Courses.* Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY, United States.

[14] Issapour, M.,* & Kelly, A. M. (2014, October). *Relationship of Students' Interest in Science and Performance in Engineering Curriculum.* Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY, United States.

[13] Turner-Edwards, M.,* & Kelly, A. M. (2014, October). *An Examination of Science Teacher Certification in an Urban Setting.* Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY, United States.

[12] Wortel-London, S. B.,* Kelly, A. M., & Groome, M. (2015, October). *Recruiting STEM Graduate Students for K-12 Education: Development of an Instrument for Identifying Candidates.* Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY, United States.

[11] Kelly, A. M. (2014, October). *Overcoming Inertia: Adopting Studio Physics in Undergraduate Education.* Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY, United States.

[10] Bugallo, M. F., Kelly, A. M., Winters, G., Geng, L., Urteaga, I., & Takai, H. (2014, May). *Exploring New Horizons: Science and Engineering Everywhere, At Anytime, For Everyone.* SUNY Conference on Instruction and Technology, Ithaca, NY, United States.

[9] Sheppard, K., Kelly, A. M., Millman, K., & Vessalico, C. (2014, March). *Clinical Richness: Master Teachers in STEM Methods Courses*. Noyce Northeast Regional Conference. Philadelphia, PA, United States.

[8] Kelly, A. M. (2011, October). *Noyce Scholars' Reflections on Teaching in High-Poverty Urban Schools: Challenges and Strategies.* Association of Science Teacher Education (Northeast Division), Black Rock Forest, Cornwall, NY, United States.

[7] Sheppard, K., & Kelly, A. M. (2011, October). *We Have Lift-Off: The New Doctoral Program in Science Education.* Association of Science Teacher Education (Northeast Division), Black Rock Forest, Cornwall, NY, United States.

[6] Kelly, A. M. (2009, October). *A Case Study of Secondary Science Teacher Career Satisfaction and Retention in an Alternative Certification Program.* Association of Science Teacher Education (Northeast Division), Wilkes Barre, PA, United States.

[5] Kelly, A. M. (2008, October). *Pedagogical Content Knowledge of Chemistry Teachers: Reflections and Outcomes.* Association of Science Teacher Education (Northeast Division), Wilkes Barre, PA, United States.

[4] Kelly, A. M. (2008, April). *Urban Youth and Access to High School Physics: Issues, Inequities, and Policies.* 11th Annual Urban University Conference Series of the New York City Louis Stokes Alliance for Minority Participation in Science, The City College of New York, New York, NY, United States.

[3] Kelly, A. M. (2007, October). *Inequitable Access to Physics in Urban High Schools: The Impact on Science Teacher Education.* Association of Science Teacher Education (Northeast Division), Amherst, MA, United States.

Local and Regional Conference Presentations (continued)

[2] Kelly, A. M. (2001, May). *Using Interactive Physics in Science Instruction.* New Jersey Statewide Systemic Initiative, Middlesex County Community College, Edison, NJ, United States.

[1] Kelly, A. M. (2001, May). *Computer-Based Learning in Physics and Chemistry.* New Jersey Statewide Systemic Initiative, Middlesex County Community College, Edison, NJ, United States.

TEACHING AND COURSE DEVELOPMENT

PROFESSIONAL HONORS – TEACHING

State University of New York Chancellor's Award for Excellence in Teaching 2015-16
Outstanding Teacher Award, Teachers College, Columbia University 2006

SCIENCE EDUCATION COURSES TAUGHT

Doctoral Science Education Courses at Stony Brook University

CSM 620: Science Teacher Education (S 2023, S 2021, F 2018, F 2015, S 2014, F 2013)
CSM 630: STEM Education Research Methods (F 2023, S 2022, S 2020, S 2017, S 2015, F 2014, F 2012, F 2011) – *New Course*
CSM 640: Directed Study in Science Education (S 2025, F 2024, Su 2024, F 2023, Su 2023, S 2023, F 2022, Su 2022, S 2022, F 2021, Su 2021, S 2021, F 2020, Su 2020, S 2020, F 2019, S 2019, F 2018, Su 2018, S 2018, S 2016, S 2014, S 2012)
CSM 645: Introduction to Quantitative Research Methods (Su 2024)

Graduate Science Education Courses at Teachers College, Columbia University

MSTC 4047: Physical Science Curriculum and Methods Laboratory (Su 2010, Su 2008, Su 2007, S 2007, Su 2006, S 2006, Su 2005, S 2005, Su 2004)
MSTC 4075: Concepts of Physics I (F 2006, F 2005, F 2004)
MSTC 4076: Concepts of Physics II (Su 2005)

Graduate Science Education Courses at Lehman College, CUNY

ESC 519: Teaching Science in Middle and High School (Su 2010, Su 2008, S 2008)
ESC 595: Internship in Classroom Teaching (F 2007)
ESC 611: Seminar in Science Education (F 2008, F 2007)
ESC 705: Research Methods in Science Education (F 2008)
ESC 707: Thesis Project Seminar II (S 2010, S 2009, S 2008, F 2007)
ESC 722: Teaching Literacy Skills in Science (Su 2011, Su 2010)
ESC 770: Advanced Methods in Teaching Science in Middle and High School (Su 2009)
ESC 771: Integrating Mathematics, Science, Technology for Middle School Learners (S 2011, S 2010) – *New Course*
ESC 790: Seminar in Middle and High School Mathematics and Science Education (S 2010, F 2009)

PHYSICS COURSES TAUGHT

Undergraduate Physics Courses at Stony Brook University

PHY 121: Physics for Life Sciences I (S 2014, S 2013)
PHY 121: Physics for Life Sciences I (F 2016, F 2015) – *New Studio Model*
PHY 122: Physics for Life Sciences II (F 2013, F 2012)
PHY 122: Physics for Life Sciences II (S 2023, S 2020, S 2019) – *New Studio Model*
PHY 123: Physics for Life Sciences I Laboratory (F 2016, F 2015) – *New Studio Model*
PHY 124: Physics for Life Sciences II Laboratory (S 2020, S 2019) – *New Studio Model*
PHY 125: Classical Physics A for Physical Sciences and Engineering, Lecture (S 2012)
PHY 125: Classical Physics A for Physical Sciences and Engineering, Recitation (S 2012)
PHY 131: Classical Physics I for Physical Sciences and Engineering (S 2022)
PHY 131: Classical Physics I for Physical Sciences and Engineering (F 2014) – *New Studio Model*
PHY 131: Classical Physics I for Physical Sciences and Engineering, Recitation (S 2022, S 2021)
PHY 132: Classical Physics II for Physical Sciences and Engineering (S 2015) – *New Studio Model*
PHY 133: Classical Physics I Laboratory (F 2014) – *New Studio Model*

Undergraduate Physics Courses at Stony Brook University (continued)

PHY 134: Classical Physics II Laboratory (S 2015) – *New Studio Model*
PHY 475: Undergraduate Teaching Practicum (S 2023, S 2020, F 2016, F 2015, S 2015, F 2014, S 2014, F 2013, S 2013, F 2012)
PHY 487: Physics Research Tutorial (S 2023, F 2022, S 2022, F 2021)

Graduate Physics Courses at Stony Brook University

PHY 580: Physics Special Research Projects (S 2025, Su 2024, F 2023, S 2022, F 2016)
PHY 600: Practicum in Physics Teaching (S 2023, S 2020, S 2019, F 2015, S 2015, F 2014)

Graduate Physics Course at Lehman College, CUNY

PHY 605: Physics for Educators, Laboratory (S 2009) – *New Course*

Undergraduate Physics Courses at Lehman College, CUNY

PHY 135: Fundamental Concepts and Methods of Physics, Lecture (F 2010)
PHY 135: Fundamental Concepts and Methods of Physics, Laboratory (F 2010)

GRADUATE ADVISEMENT

DOCTORAL ADVISEMENT

Doctoral Advisees – Ph.D. in STEM Education

[23] Dwyer, K. (2025, anticipated). *Middle school mathematics acceleration and STEM academic outcomes.* [Doctoral dissertation, State University of New York at Stony Brook].
[Employment: Mathematics Teacher, Syosset Public School District]

[22] Pope, D. (2023). *Development of preservice mathematics teachers' pedagogical content knowledge and conceptual/procedural orientations towards mathematics.* (Publication No. 30528861) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Mathematics Teacher, Commack Public School District]

Doctoral Advisees – Ph.D. in Science Education

[21] Longo, L. (2025, anticipated). *Elementary teachers and their preparedness and commitment to science instruction.* [Doctoral dissertation, State University of New York at Stony Brook].
[Employment: Director of Science, Commack Public School District]

[20] Steigerwald, J. (2025, anticipated). *Middle school science acceleration and STEM academic outcomes.* [Doctoral dissertation, State University of New York at Stony Brook].
[Employment: Science Teacher, Deer Park Public School District]

[19] Richards, Z. (2024). *Astronomy identity, coursetaking, performance, and persistence in two-year and four-year colleges.* (Publication No. 31297371) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Lecturer, Earth and Physical Sciences, York College, City University of New York]

[18] Chatham, E. (2022). *Leveraging instructional routines within a professional learning framework to facilitate NGSS implementation in high school science.* (Publication No. 30243051) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Curriculum Development & Professional Learning Manager, New Visions for Public Schools]

[17] Schlendorf, C. (2022). *Precollege Earth Science Education: Participation, Performance, and Equity.* (Publication No. 29162171) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Assistant Professor of Biology, Farmingdale State College]

[16] Schoepflin, M. (2022). *Social emotional learning in secondary mathematics classrooms during the COVID pandemic.* (Publication No. 30241396) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Mathematics Teacher, Smithtown High School]

Doctoral Advisees – Ph.D. in Science Education (continued)

[15] Gearns, R. (2021). *The role of school counseling in student preparation for post-secondary engineering study and careers.* (Publication No. 28495875) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Physics Teacher, Sachem Public School District]

[14] Krakehl, R. (2021). *High school physics equity, access, teaching, and learning.* (Publication No. 28496861) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Physics Teacher, Manhasset Public School District]

[13] Palermo, M. (2021). *Physics and chemistry teacher turnover and equity issues related to Advanced Placement chemistry enrollment and performance.* (Publication No. 28865920) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Chemistry Teacher, William Floyd Public School District]

[12] Rosen, D. (2021). *Social learning in remote undergraduate physics laboratory courses.* (Publication No. 28863383) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Assistant Professor, School of Physics & Astronomy, University of Edinburgh, Scotland, UK]

[11] Christian, K. B. (2019). *Secondary science teacher professional development in science and engineering practices.* (Publication No. 27670960) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Director of Mathematics, Science, Technology, Business, CTE, FACS, Rocky Point UFSD]

[10] Cohen, R. (2019). *Community college science and mathematics coursetaking and performance and their relationship to graduation, transfer, and STEM persistence.* (Publication No. 13865664) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Director, Office of Institutional Research and Assessment, University of Vermont]

[9] Slagus, L. M. (2019). *Impacts of Urban Advantage professional development on middle school science teaching and learning.* (Publication No. 13886554) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Middle School Science Teacher, New York City Department of Education]

[8] Wortel, S. B. (2019). *STEM identity formation of undergraduate mentors and middle school students in an informal science education program.* (Publication No. 27670586) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Research Associate, CSforALL]

[7] Hantz, C. (2018). *Early history of Earth science education in New York State, 1865-1910.* (Publication No. 10825281) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Earth Science Teacher, Mount Sinai Public School District]

[6] Gatz, J. (2017). *Middle school girls' science motivation and performance: Cognitive effects of an out-of-school time program with nutrition and fitness components.* (Publication No. 10280221) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Biology and Science Research Teacher, Patchogue-Medford Public School District]

[5] Mintz, J. A. (2017). *The impacts of the annual professional performance review in New York State: Science teachers' and administrators' perspectives.* (Publication No. 10619372) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Director of Science, Eastport-South Manor Central Public School District]

[4] Nehmeh, G. (2017). *Factors that influence physics access and participation throughout the pipeline.* (Publication No. 10620942) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Physics Teacher, Bronx High School of Science]

[3] O'Brien, S. (2017). *Topic specific pedagogical content knowledge and chemistry teacher preparation in electrochemistry.* (Publication No. 10619384) [Doctoral dissertation, Stony Brook University]. State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Director of Science, Smithtown Public School District; President, Science Teachers Association of New York State (STANYS)]

Doctoral Advisees – Ph.D. in Science Education (continued)

[2] Sasway, H. M. (2017). *Factors that influence community college students' interest in science coursework.* (Publication No. 10283224) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Dean of Math, Science, Technology, and Health, SUNY Schenectady County Community College]

[1] McHugh, L. (2016). *The integration of mathematics in middle school science: Student and teacher impacts related to science achievement and attitudes towards integration.* (Publication No. 10140739) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.
[Employment: Director of Science, William Floyd Public School District]

Doctoral Advisees – Dissertations in Progress – Ph.D. in Science Education

[6] Cioffi, C. *Racial segregation and high school advanced STEM access and performance outcomes.*
[5] Darienzo, M. *Precollege quantum information science and technology education for students and teachers.*
[4] DeLaCruz, R. *Student outcomes in quantum information science and technology outreach.*
[3] Lombardo, L. *Physics laboratory epistemology among undergraduate students in introductory coursework.*
[2] Sherwood, K. *Generative leadership development of university women in engineering through peer mentoring.*
[1] Zinn, A. *Teacher outcomes in quantum information science and technology professional learning.*

Dissertation Committee Member – Ph.D. in Science Education

[8] Conenna, M. (2021). *The history of the New York State Biology Regents Examination.* (Publication No. 28644494) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[7] Charles, T. (2020). *The history of the New York State Chemistry Regents Examination.* (Publication No. 27737783) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[6] Gough, C. (2020). *Vertically aligned professional learning in the new biology.* (Publication No. 27995434) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[5] Gouraige, J. M. (2020). *Urban successes in the Bronx: Moving away from the deficit model.* (Publication No. 27995805) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[4] Sleckman, J. (2020). *A qualitative study of visualization skills used to understand chemical bonding theories.* (Publication No. 27995618) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[3] Greengold, S. (2019). *Chemistry teachers' conceptions about chemical equilibrium in terms of rates of reaction.* (Publication No. 13886575) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[2] Nachtigall, D. (2019). *Collaborating, mentoring, and liaising: Analyzing what teacher leadership frameworks say and what STEM teacher leaders do.* (Publication No. 27665336) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[1] Wankmuller, R. (2019). *Stuck in the middle: Middle school science and the Next Generation Science Standards.* (Publication No. 13886532) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

Dissertation Committee Member – Ph.D. in Technology, Policy, and Innovation

[2] Telendii, N. (2023). *Building a framework for effective professional development programs for teachers learning new technical subjects.* (Publication No. 30687587) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

[1] Fernández, R. E. (2016). *A quantitative policy analysis of Bronx County public high school students' mathematics course completion.* (Publication No. 10190778) [Doctoral dissertation, State University of New York at Stony Brook]. ProQuest Dissertations & Theses Global.

SELECT MASTER'S THESIS ADVISEES (M.S.ED.) AT LEHMAN COLLEGE, CUNY

[8] Kennedy-Shaffer, R. (2010). *Teaching Newton's laws to urban middle school students in a college-based science enrichment program.* [Unpublished master's thesis]. Lehman College, City University of New York.

[7] Chen, J. L. (2009). *The chair conformations and structural properties of cyclohexanes.* [Unpublished master's thesis]. Lehman College, City University of New York.

[6] Gonzalez, C. (2009). *Science teacher retention in New York City public schools.* [Unpublished master's thesis]. Lehman College, City University of New York.

[5] Leventhal, A. (2009). *Pedagogical content knowledge (PCK) in high school chemistry: Teacher efficacy through questioning.* [Unpublished master's thesis]. Lehman College, City University of New York.

[4] Marcinowski Slagus, L. (2009). *The use of analogies in a high school chemistry program.* [Unpublished master's thesis]. Lehman College, City University of New York.

[3] Roth, M. L. (2009). *Teaching gas laws in a private school setting.* [Unpublished master's thesis]. Lehman College, City University of New York.

[2] Schultz, D. A. (2009). *A history of the change in the definition of educational success in the New York City Public School System as seen through the lens of Central Park East Secondary School.* [Unpublished master's thesis]. Lehman College, City University of New York.

[1] Wisnieski, D. J. (2009). *Using evolution court cases to learn about science and society.* [Unpublished master's thesis]. Lehman College, City University of New York.

SERVICE AND AFFILIATIONS

PROFESSIONAL SERVICE

Science Education Research Community – Editorial Board Positions

Program Committee, IEEE International Quantum Science and Engineering Education Conference (QSEEC25) 2025
Associate Editor, *Journal of Research in Science Teaching* 2020–25
Editorial Review Board, *Journal of Science Teacher Education* 2018–20

Science Education Research Community – Peer Review Service (Journals)

American Society for Engineering Education Conference Proceedings; *Assessment in Education: Principles, Policy, and Practice; Educational Policy; Effective Practices in Preservice Physics Teacher Education* (Edited Volume); *Journal of Chemical Education; International Journal of Engineering Education; International Journal of Science & Mathematics Education; Integrated STEM Education Conference (ISEC) Proceedings; International Journal of STEM Education; Journal of Computer Assisted Learning; Journal of Education for Students Placed at Risk; Journal of Educational Psychology; Journal of Engineering Education; Journal of Geoscience Education; Journal of Research in Science Teaching*; *Journal of Science Education and Technology; National Association of Research in Science Teaching Annual Conference; National Council of Teachers of Mathematics Annual Conference; Physical Review Physics Education Research; Physics Education Research Conference Proceedings; PLOS ONE; Public Library of Science; Psychology of Women Quarterly; School Science and Mathematics; Science Education; The Physics Teacher; The Review of Higher Education; Women in Sport and Physical Activity Journal.*

Science Education Research Community – Peer Review Service (Grants)

Panelist, National Science Foundation, Division of Undergraduate Education 2025
Panelist, National Science Foundation, Education Core Research 2025
Ad Hoc Reviewer, Discovery Research and Learning 2022–present
Panelist, National Science Foundation, Discovery Research and Learning 2021
Panelist, National Science Foundation, Division of Engineering Education and Centers 2019–20

Science Education Research Community – Peer Review Service (Promotion Files)

Arizona State University, George Mason University, Rutgers University, State University of New York at Buffalo, Texas Tech University, University of Texas, San Antonio

Science Education Community – Advisory Boards

Lead University Faculty Advisor, PhysTEC STEP UP Program, New York City Region 2023-present
Founder and Director, PhysTEC Regional Network of Southeast New York 2019-present
Program Development Advisor, American Institute of Physics Diversity Task Force 2019-21

Science Education Community – Advisory Boards (continued)

Member, New York State Teacher Certification Exams Physics Standard Setting Committee	2020
Member, New Visions Science Team Field Testing Advisory Board	2017-19
Member, Advisory Board of NY Botanical Garden's *IMLS Leadership Grant*	2014-15
Member, Advisory Board of NY Botanical Garden's *Exposing the STEM in Sticks and Stones*	2012-13
Member, APLU Science and Mathematics Teacher Imperative (Physics Advisory Group)	2011
Member, PhysTEC Committee on Quality in K-12 Physics Education	2011
Member, Carnegie Higher Education Panel on Middle School Science, AMNH	2009

Science Education Community – Conference Service

Moderator, Transforming Institutions Conference	2023
Moderator, New Perspectives in Science Education Conference	2018
Discussant, Physics Education Research Conference	2008

Stony Brook University Service

Member, Advisory Group on Honors College Curriculum	2023
Member, Working Group on Dissertation Committee Policy, Graduate School	2023
Reviewer, SEED Grant Proposals, Office of Proposal Development	2023
Senator-at-Large, University Faculty Senate	2020-23
Member, Hiring Committee for Educational Effectiveness Specialists	2022
Member, Continuing and Professional Education Working Group, Financial Sustainability Steering Committee	2021
Advisory Board Member, Center for Excellence in Learning and Teaching	2018-21
Member, President's Committee for SUNY Chancellor's Award for Excellence in Teaching	2016-19
Member, Tenure Committee for School of Journalism	2019
Moderator, Panel on the National Academies Report on Sexual Harassment and Gender Discrimination	2019
Member, Women in Science and Engineering Admissions Committee	2017-18
Panelist, Graduate School Teacher Assistant Training	2018
Panelist, Stony Brook NSF CAREER Award Symposium	2017
Panel Discussant, Women's Leadership Symposium	2016
Stony Brook Representative, Code Girl Panel, Setauket Elementary School, Setauket, NY	2016
Faculty Mentor, STEM Undergraduate Networking Event	2015
Chair, Provost's Outstanding Lecturer Award Committee	2014
Member, Presidential/Provostial Graduate in 4 Task Force	2014
Reviewer, Stony Brook Online Learning Development (S-BOLD) Judging Panel	2014
Faculty Judge, Computer & Electrical Engineering Summer Camp	2012-13

Stony Brook – College of Arts & Sciences Service

Member, Promotion and Tenure Committee (Junior), College of Arts & Sciences Faculty Senate	2023-25
Member, Undergraduate Curriculum Committee, College of Arts & Sciences Faculty Senate	2020-23
Senator-at-Large, College of Arts & Sciences Faculty Senate	2020-23
College of Arts/Sciences Representative, Women in Science and Engineering Advisory Board	2016
Search Committee Member, Lecturer Position in Undergraduate Biology	2015

Stony Brook – Institute for STEM Education Service

Member, Doctoral Admissions Committee, Science Education Program	2013-present
Associate Director, Ph.D. Program in Science Education	2011-present
Acting Director, Institute for STEM Education	2018-19
Chair, Search Committee for Senior Educational Specialist	2019
Faculty Evaluator, New York State Master Teacher Program	2016-17
Search Committee Member, Tenure Track Position in Chemistry/Science Education	2013-14
Co-Author, Center for Science & Mathematics Education Five-Year Strategic Plan	2013
Search Committee Member, Tenure Track Position in Biology/Science Education	2012
Search Committee Member, Lecturer in Science Education	2011

Stony Brook – Department of Physics & Astronomy Service

Director, Master of Arts in Teaching Physics Program	2023-present
Coordinator, PhysTEC Lead Institution, American Physical Society STEP-UP	2022-present

Stony Brook – Department of Physics & Astronomy Service (continued)

Member, Physics Undergraduate Curriculum Committee	2014-present
Faculty Evaluator, Master of Arts in Teaching, Candidate Demonstration Lessons	2012-present
Member, Master of Arts in Physics Teaching Committee	2012-present
Stony Brook Representative, Physics Teacher Education Coalition	2011-present
Search Committee Member, Lecturer Positions in Physics	2024
Panelist, Society of Physics Students Undergraduate Day	2023
Member, Faculty Tenure Committee	2021-22
Chair, Search Committee for Instructional Laboratory Specialist	2020-21
Search Committee Member, Lecturer Position in Physics	2020
Panelist, Responsible Research Conduct Orientation	2018
Program Committee, East Coast Conference of Undergraduate Women in Physics	2013-14
Faculty Evaluator, Graduate Teaching Assistant Training	2012-14
Chair, Search Committee for Manager of Physics Laboratories	2014
Faculty Representative, Brookhaven National Laboratory Admitted Students Day	2013

Lehman College, CUNY Service

Director, Teacher Education for Advanced Science Preparation Program (TEASP)	2010-11
Chair, Department of Middle & High School Education Curriculum Committee	2009-11
Member, Graduate Studies Committee	2009-11
Lehman College Representative, Physics Teacher Education Coalition (PhysTEC)	2009-11
Member, NSF Robert Noyce Teaching Scholarship Proposal and Steering Committees	2008-11
Coordinator, Graduate Program in Science Education	2007-11
Search Committee Member, Professor of Social Studies in Middle & High School Education	2011
Member, President's STEM Education Strategic Plan Committee	2011
Search Committee Member, Professor of Research Methods in Middle & High School Education	2009-10
Professional Staff Congress (PSC-CUNY) Faculty Grants Review Panel – Education Awards	2008-10
Acting Director, Robert Noyce Teaching Scholarship Program	2010
Member, ePortfolio Committee	2008-09
Lehman College Representative, American Association of Colleges of Teacher Education	2008-09
Contributing Author, NCATE/SPA rejoinder report for Science Education Program	2009
Member, Bronx Early College Academy Curriculum Planning Committee	2007-08
Lead Author, NCATE/SPA rejoinder report for Science Education Program	2008

PROFESSIONAL AFFILIATIONS

American Association of Physics Teachers
American Physical Society (Topical Groups: (1) Forum on Education and (2) Physics Education Research)
National Association for Research in Science Teaching
National Q–12 Education Partnership
Physics Teacher Education Coalition