Stony Brook University

ANGELA M. KELLY

Associate Professor, Institute for STEM Education and Department of Physics & Astronomy
Associate Director of Science Education, Institute for STEM Education, Stony Brook University
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TEACHING AND RESEARCH INTERESTS

Inequities in pre-college and university physical science and engineering education; reformed teaching practices in undergraduate science; sociocognitive influences on STEM access and participation; STEM curricular integration; urban science teacher recruitment and retention.

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
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-present
[tenured, effective 9/2014]
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
[promoted to Associate Professor, effective 1/2012]

Higher Education Administration
Associate Director of Science Education, Institute for STEM Education, Stony Brook University, NY 2011-present
Acting Executive Director, Institute for STEM Education, Stony Brook University, NY 2018
Program 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-present
Pedagogical training in physics for Bank Street College elementary science teacher candidates
Adjunct Assistant Professor, Teachers College, Columbia University, New York, NY 2004-10
Graduate Program in Science Education, Department of Mathematics, Science & Technology
Workshop Instructor, College Now, CUNY, Bronx, NY 2008-09
Professional development and curriculum training for secondary physical science teachers
Workshop Instructor, Center for Technology and School Change, New York, NY 2004-08
Teacher Leadership Quality Partnership (NYSED), Teachers College, Columbia University
Professional development and instructional technology implementation for science and mathematics teachers
Graduate Teaching Assistant, Chemistry Department, Villanova University, Villanova, PA 1993

Secondary Science Teaching (Grades 7-12)

Physics and Chemistry Teacher, Bronx Institute, Lehman College, CUNY, Bronx, NY Center for Gifted and Talented Youth and Enlace Latino Collegiate Society Programs	2008-14
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, 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 Field Supervisor, Teachers College, Columbia University	2004-05
Analytical Inorganic Chemist, Johnson Matthey Incorporated, West Deptford, NJ	1992-93

EDUCATIONAL LICENSURE

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

PUBLICATIONS

Refereed Journals

[24] Cohen, R.,* & **Kelly, A. M.** (in press). The impact of community college science and mathematics coursetaking and remediation on graduation, transfer, and non-completion rates. *The Review of Higher Education.*

[23] 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.

[22] Gatz, J.,* **Kelly, A. M.**, & Clark, S. L. (2018). Improved executive function and science achievement for at-risk middle school girls in an aerobic fitness program. *The Journal of Early Adolescence.* Prepublished April 20, 2018; doi: 10.1177/0272431618770786.

[21] Nehmeh, G.,* & **Kelly, A. M.** (2018). Urban science teachers in isolation: Challenges, resilience, and adaptive action. *Journal of Science Teacher Education.* Prepublished May 25, 2018; doi: 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.

[19] Bugallo, M. F., & **Kelly, A. M.** (2017). Engineering outreach: Yesterday, today, and tomorrow. *IEEE Signal Processing Magazine, 34*(3), 69-100.

[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.

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

[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. doi: 10.1103/PhysRevSTPER.9.010122.

[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.

*Ph.D. candidate in Program in Science Education at Stony Brook University, or M.S.Ed. candidate in Science Education at Lehman College, City University of New York.

Refereed Journals (continued)

[10] **Kelly, A. M.** (2011). Teaching Newton's laws with the iPod Touch in conceptual physics. *The Physics Teacher, 49*(4), 202-205.

[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.

[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.

[7] Chen, J., Shankar, S., **Kelly, A. M.**, Gningue, S., & Rajaravivarma, R. (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.

[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.

[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.

[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.

Invited Articles

[4] Sheppard, K., McCarthy, R., **Kelly, A. M.**, & Drees, A. (2017). Stony Brook University physics teacher preparation program – The 6 "C"s. In R. Steinberg (Ed.), *APS Forum on Education Newsletter* (pp. 12-13). College Park, MD: American Physical Society.

[3] Bugallo, M. F., & **Kelly, A. M.** (2014). Electrical and computer engineering outreach at Stony Brook University. *The Pulse of Long Island IEEE Newsletter, 61*(4), 8-9.

[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.

[1] **Kelly, A. M.** (2008). *No Child Left Behind (NCLB) and issues of equity in physics access and enrollment.* Position paper published in the Public Policy Forum of the National Society of Black Physicists.

Invited Conference Proceedings

[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). Melville, NY: 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.

Refereed Conference Proceedings

[14] 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 of Engineering Education Annual Conference & Exposition*, Salt Lake City, UT.

[13] 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 of Engineering Education Annual Conference & Exposition*, Salt Lake City, UT.

[12] Heal, 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 of Engineering Education Annual Conference & Exposition*, Salt Lake City, UT.

[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 of Engineering Education Annual Conference & Exposition*, Salt Lake City, UT.

Refereed Conference Proceedings (continued)

[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.* Florence, Italy.

[9] Krayem, Z., **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 of Engineering Education Annual Conference & Exposition*, Salt Lake City, UT.

[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 of Engineering Education Annual Conference & Exposition*, Salt Lake City, UT.

[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, Australia.

[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.

[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). Melville, NY: American Institute of Physics.

[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.

[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). Melville, NY: American Institute of Physics.

[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.

[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.

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). Hershey, PA: 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). Lanham, MD: 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). Boston, MA: Houghton Mifflin.

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 Submitted

[4] Gatz, J.,* & **Kelly, A. M.** Dose response effect of physical fitness on cognitive measures and the science achievement of middle school girls.

[3] McHugh, L.,* **Kelly, A. M.**, & Burghardt, M. D. Professional development for a middle school mathematics-infused science curriculum.

[2] Mintz, J. A.,* & **Kelly, A. M.** Science teacher motivation and evaluation policy in a high-stakes testing state.

[1] Sasway, H.,* & **Kelly, A. M.** Instructor behaviors that affect student attitudes towards science.

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

PROFESSIONAL HONORS – SCHOLARSHIP

Best Diversity Paper, American Society of 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

INVITED TALKS/COLLOQUIA (NATIONAL)

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

[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. 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. 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.

[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.

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

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

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

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

[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.

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

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

[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. 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.

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

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

National Invited Talks/Colloquia (continued)

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

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

[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. 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.

Invited National Conference Panel Participation

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

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

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

[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, Alberta, 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.

INVITED TALKS/COLLOQUIA (REGIONAL)

[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.

[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.

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

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

[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.

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

[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.

[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.

Invited Regional Talks (continued)

[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.

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

[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.

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

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

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

[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.

PEER REVIEWED NATIONAL CONFERENCE PAPERS (UNPUBLISHED)

[28] Nehmeh, G.,* & **Kelly, A. M.** (2018, April). *Self-Determination of Women as Underrepresented Minorities in Undergraduate Physical Science.* Paper presented at the Annual Conference of the American Educational Research Association, New York, NY.

[27] Sasway, H. M.,* & **Kelly, A. M.** (2018, January). *Community College Students' Interest and Motivation to Study Science.* Paper presented at the Annual Conference of the Association of Science Teacher Education, Baltimore, MD.

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

[25] O'Brien, S.,* & **Kelly, A. M.** (2017, April). *Master Teachers' Topic-Specific Pedagogical Content Knowledge (TSPCK) of Electrochemistry.* Paper presented at the Annual Conference of the National Association of Research in Science Teaching, San Antonio, TX.

[24] Sasway, H. M.,* & **Kelly, A. M.** (2017, April). *Factors that Influence Community College Students' Interest in Science Coursework.* Paper presented at the Annual Conference of the National Association of Research in Science Teaching, San Antonio, TX.

[23] 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 presented at the Annual Conference of the National Association of Research in Science Teaching, San Antonio, TX.

[22] 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 presented at the Annual Conference of the National Association of Research in Science Teaching, Baltimore, MD.

[21] Bugallo, M. F., **Kelly, A. M.**, & Ha, M. (2015, April). *Research on Impacts of an Electrical Engineering Summer Program for High School Students.* Paper presented at the Annual Conference of the National Association of Research in Science Teaching, Chicago, IL.

[20] 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.* Paper symposium presentation at the Annual Conference of the National Association of Research in Science Teaching, Chicago, IL.

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

[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 presented at the Annual Conference of the National Association of Research in Science Teaching, Pittsburgh, PA.

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

National and International Conference Papers (continued)

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

[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 presented at the Annual Conference of the Association of Science Teacher Education, San Antonio, TX.

[14] Qian, G., **Kelly, A. M.**, & Gningue, S. M. (2012, April). *Understanding Noyce Scholars' Epistemological Beliefs about Teaching and Learning Science and Mathematics.* Paper presented at the Annual Conference of the American Educational Research Association, Vancouver, British Columbia.

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

[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*. Paper presented at the Annual Conference of the American Educational Research Association, New Orleans, LA.

[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 presented at the Annual Conference of the Association of Science Teacher Education, Minneapolis, MN.

[10] **Kelly, A. M.**, & Smith, J. (2010, May). *Science Education and TESOL: A Collaborative Professional Development Model for Alternative Certification Teacher Induction.* Paper presented at the Annual Conference of the American Educational Research Association, Denver, CO.

[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 presented at the Annual Conference of the National Association of Research in Science Teaching, Philadelphia, PA.

[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 presented at the Annual Conference of the National Association of Research in Science Teaching, Philadelphia, PA.

[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 presented at the Annual Conference of the National Association of Research in Science Teaching, Garden Grove, CA.

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

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

[4] Sheppard, K., & **Kelly, A. M.** (2008, March). *The Small Schools Movement in New York City and its Impact on Physics Education.* Paper presented at the Annual Conference of the American Educational Research Association, New York, NY.

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

[2] **Kelly, A. M.** (2006, April). *Restructured Secondary Schools and Access to Science: The Case of Physics in New York City.* Paper presented at the Annual Conference of the American Educational Research Association, San Francisco, CA.

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

PEER REVIEWED CONFERENCE POSTERS

National and International Conference Posters

[12] 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 presented at the Annual Conference of the American Educational Research Association, New York, NY.

[11] Slagus, L. M.,* & **Kelly, A. M.** (2018, January). *The Impact of the Urban Advantage Initiative on Middle School Science Teachers.* Poster presented at the Annual Conference of the Association of Science Teacher Education, Baltimore, MD.

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

[9] 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 presented at Annual Conference of the American College of Sports Medicine, Boston, MA. Abstract published in *Medicine and Science in Sports and Exercise*, *49*(5S), 210.

[8] Gatz, J.,* & **Kelly, A. M.** (2017, April). *Middle School Girls' Science Achievement and Cognition: Effects of an After School Informal Science Program.* Poster presented at the Annual Conference of the National Association of Research in Science Teaching, San Antonio, TX.

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

[6] Mintz, J.,* & **Kelly, A. M.** (2017, April). *Science Teacher and Administrator Perspectives of Teacher Evaluation Systems.* Poster presented at the Annual Conference of the National Association of Research in Science Teaching, San Antonio, TX.

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

[4] Gatz, J.,* & **Kelly, A. M.** (2016, April). *Middle School Girls' Science Motivation and Performance: Cognitive Effects of an Out-of-School-Time Program.* Poster presented at the Annual Conference of the National Association of Research in Science Teaching, Baltimore, MD.

[3] 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 presented at Annual Conference of the American College of Sports Medicine, San Diego, CA. Abstract published in *Medicine and Science in Sports and Exercise*, *48*(5S), 735.

[2] Turner-Edwards, M.,* **Kelly, A. M.**, & Sheppard, K. (2015, April). *Science Teacher Certification, Access to Science, and Student Learning in an Urban Setting.* Poster presented at the Annual Conference of the National Association of Research in Science Teaching, Chicago, IL.

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

Local and Regional Conference Posters

[3] Sasway, H. M.,* & **Kelly, A. M.** (2016, October). *Student Interest in Community College Biology Courses.* Poster presented at the Annual Conference of the Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY.

[2] Issapour, M.,* & **Kelly, A. M.** (2014, October). *Relationship of Students' Interest in Science and Performance in Engineering Curriculum.* Poster presented at the Annual Conference of the Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY.

[1] Turner-Edwards, M.,* & **Kelly, A. M.** (2014, October). *An Examination of Science Teacher Certification in an Urban Setting.* Poster presented at the Annual Conference of the Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY.

PEER REVIEWED NATIONAL CONFERENCE PRESENTATIONS

National and International Conference Presentations

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

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

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

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

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

[3] **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.* Presentation at the National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC.

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

[1] 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.* Presentation at the National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC.

Local and Regional Conference Presentations

[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.* Presentation at the Annual Conference of the Association of Science Teacher Education (Northeast Division), Teachers College, Columbia University, New York, NY.

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

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

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

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

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

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

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

[4] **Kelly, A. M.** (2008, April). *Urban Youth and Access to High School Physics: Issues, Inequities, and Policies.* Presentation at the 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.

Local and Regional Conference Presentations (continued)

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

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

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

GRANT FUNDING

Multiple – Stony Brook University [SBU] ($3,096,449)

[13] SUNY Excels – $27,260 2018-19
Stony Brook Undergraduate Physics Teaching and Learning
PI: A. M. Kelly; Co-PI: R. McCarthy, SBU

[12] National Science Foundation – Broadening Participation in Engineering – $99,712 2017-20
ÉGALITÉ: Education, Guidance, Advancement, and Learning in Technology and Engineering
[Supplemental Award – NSF 7686640]
PI: M. F. Bugallo, SBU; Co-PIs: A. M. Kelly, D. Ferguson, R. Kukta, SBU

[11] National Science Foundation – Broadening Participation in Engineering – $599,365 2017-20
ÉGALITÉ: Education, Guidance, Advancement, and Learning in Technology and Engineering
[NSF 7686640]
PI: M. F. Bugallo, SBU; Co-PIs: A. M. Kelly, D. Ferguson, R. Kukta, SBU

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

[9] PSEG – $109,000 2017-19
Women in Science and Engineering
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] 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

[6] 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

[5] Stony Brook University Parents' Fund for Excellence – $200,000 2014-18
Studio Physics at Stony Brook University
PI: A. M. Kelly; Co-PI: R. D. Bynum, 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

Multiple PI Grants – SBU (continued)

[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 – Stony Brook University ($19,900)

[3] Presidential Mini-Grant for Departmental Diversity – $3,200 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 – Lehman College, CUNY ($4,099,020)

[4] 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

[3] National Science Foundation – Robert Noyce Scholarship Program – $749,838 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

[2] National Science Foundation – Robert Noyce Scholarship Supplemental Grant – $120,562 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 – Lehman College, CUNY ($31,555)

[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

[3] George N. Shuster Fellowship – $1,530 2009
Science Teacher Retention in an Alternative Certification Track: Examining the New York City Teaching Fellows Program

[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

TEACHING AND COURSE DEVELOPMENT

Doctoral Science Education Courses at Stony Brook University

CSM 620: Science Teacher Education (F 2018, F 2015, S 2014, F 2013)
CSM 630: Science Education Research Methods (S 2017, S 2015, F 2014, F 2012, F 2011) – *New Course*
CSM 640: Directed Study in Science Education (F 2018, Su 2018, S 2018, S 2016, S 2014, S 2012)

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 2019) – *New Studio Model*

Undergraduate Physics Courses at Stony Brook University (continued)

PHY 123: Physics for Life Sciences I Laboratory (F 2016, F 2015) – *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 (F 2014) – *New Studio Model*
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*
PHY 134: Classical Physics II Laboratory (S 2015) – *New Studio Model*
PHY 475: Undergraduate Teaching Practicum (F 2016, F 2015, S 2015, F 2014, S 2014, F 2013, S 2013, F 2012)

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, and 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)

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)

DOCTORAL ADVISEES – PH.D. IN SCIENCE EDUCATION

[7] Hantz, C. (2018). *The early history of Earth science education in New York State, 1865-1910*. (Doctoral dissertation). Stony Brook University, Stony Brook, NY.

[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*. (Doctoral dissertation). Retrieved from ProQuest. (10280221)

[5] Mintz, J. A. (2017). *The impacts of the annual professional performance review in New York State: Science teachers' and administrators' perspectives*. (Doctoral dissertation). Retrieved from ProQuest. (10619372)

[4] Nehmeh, G. (2017). *Factors that influence physics access and participation throughout the pipeline*. (Doctoral dissertation). Retrieved from ProQuest. (10620942)

[3] O'Brien, S. (2017). *Topic specific pedagogical content knowledge and chemistry teacher preparation in electrochemistry*. (Doctoral dissertation). Retrieved from ProQuest. (10619384)

[2] Sasway, H. M. (2017). *Factors that influence community college students' interest in science coursework*. (Doctoral dissertation). Retrieved from ProQuest. (10283224)

[1] McHugh, L. (2016). *The integration of mathematics in middle school science: Student and teacher impacts related to science achievement and attitudes towards integration*. (Doctoral dissertation). Retrieved from ProQuest. (10140739)

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

[7] Chatham, E. *Curricular innovations to incorporate NGSS in secondary biology instruction.*
[6] Cohen, R. *Community college STEM achievement and impacts on graduation and transfer.*
[5] Gearns, R. *Role of school counseling in science and engineering preparation of high needs students.*
[4] Heal, K. C. *Secondary science teacher professional development in engineering concepts and design.*
[3] Sherwood, K. *Recruitment and retention of women in undergraduate engineering.*
[2] Slagus, L. M. *Impacts of Urban Advantage professional development on secondary science teachers.*
[1] Wortel-London, S. B. *STEM mentoring and student achievement in an informal science education program.*

Dissertation Committees – Ph.D. in Science Education

[4] Charles, T. *The history of the Chemistry Regents Examination in New York State.*
[3] Greengold, S. *Chemistry teachers' conceptions about chemical equilibrium in terms of rates of reaction.*
[2] Lynch, T. *Acceleration for all in science.*
[1] Wankmuller, R. *Stuck in the middle: Middle school science and the Next Generation Science Standards.*

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

[1] Fernández, R. E. (2016). *A quantitative policy analysis of Bronx County public high school students' mathematics course completion.* (Doctoral dissertation). Retrieved from ProQuest. (10190778).

SELECT MASTER'S THESIS ADVISEES AT LEHMAN COLLEGE, CITY UNIVERSITY OF NEW YORK

[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, NY.
[7] Chen, J. L. (2009). *The chair conformations and structural properties of cyclohexanes.* (Unpublished master's thesis). Lehman College, City University of New York, NY.
[6] Gonzalez, C. (2009). *Science teacher retention in New York City public schools.* (Unpublished master's thesis). Lehman College, City University of New York, NY.
[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, NY.
[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, NY.
[3] Roth, M. L. (2009). *Teaching gas laws in a private school setting.* (Unpublished master's thesis). Lehman College, City University of New York, NY.
[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, NY.
[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, NY.

PROFESSIONAL SERVICE

Science Education Research Community – Peer Review Service

Editorial Review Board, *Journal of Science Teacher Education*	2018-21
Reviewer, *The Review of Higher Education*	2018-present
Reviewer, *Assessment in Education: Principles, Policy, and Practice*	2017-present
Reviewer, *Journal of Computer Assisted Learning*	2017-present
Reviewer, *PLOS ONE, Public Library of Science*	2017-present
Reviewer, *Journal of Education for Students Placed at Risk*	2016-present
Reviewer, *Psychology of Women Quarterly*	2016-present
Reviewer, *School Science and Mathematics*	2014-present
Reviewer, *Physical Review Physics Education Research*	2013-present
Reviewer, *Journal of Science Education and Technology*	2010-present
Reviewer, *Journal of Research in Science Teaching*	2008-present
Annual Conference Proposal Reviewer, National Association of Research in Science Teaching	2005-present
Reviewer, *Integrated STEM Education Conference (ISEC) Proceedings*	2014
Reviewer, *Physics Education Research Conference Proceedings*	2014
Reviewer, *Effective Practices in Preservice Physics Teacher Education* (Edited Volume)	2013

Science Education Community – Advisory Boards

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, New Perspectives in Science Education Conference	2018
Discussant, Physics Education Research Conference	2008
Discussant, National Association of Research in Science Teaching Conference	2008

Stony Brook University Service

Advisory Board Member, Center for Excellence in Learning and Teaching	2018-present
Member, Women in Science and Engineering Admissions Committee	2017-present
Member, President's Committee for SUNY Chancellor's Award for Excellence in Teaching	2016-19
Panel Discussant, Stony Brook NSF CAREER Award Symposium	2017
Presenter, Collegiate Science and Technology Entry Program	2016
Panel Discussant, Women's Leadership Symposium	2016
Stony Brook Representative, Code Girl Panel, Setauket Elementary School, Setauket, NY	2016
Faculty Mentor, Undergraduate Networking Event	2015
Chair, Provost's Outstanding Lecturer Award Committee	2014
Member, Presidential/Provostial Graduate in 4 Task Force	2014
Member, 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

College of Arts/Sciences Representative, Women in Science and Engineering Advisory Board	2016-present
Search Committee Member, Lecturer Position in Undergraduate Biology	2015

Stony Brook – Institute for STEM Education Service

Acting Director, Institute for STEM Education	2018
Member, Doctoral Admissions Committee, Science Education Program	2013-present
Presenter, Doctoral Admissions Open Houses at West and Manhattan Campuses	2012-present
Associate Director, Ph.D. Program in Science Education	2011-present
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 Science Education	2012
Search Committee Member, Lecturer in Science Education	2011

Stony Brook – Department of Physics & Astronomy Service

Member, Physics Undergraduate Curriculum Committee	2014-present
Faculty Evaluator, M.A.T. Candidate Demonstration Lessons	2012-present
Member, Physics M.A.T. Committee, Department of Physics & Astronomy	2012-present
Stony Brook Representative, Physics Teacher Education Coalition (PhysTEC)	2011-present
Member, 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

Lehman College, CUNY Service (continued)

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 Physical Society
Association for Science Teacher Education
European Science Education Research Association
National Association of Research in Science Teaching
Physics Teacher Education Coalition