

GREGORY J. KELLY

Senior Associate Dean for Research and Outreach
Distinguished Professor, Science Education

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EDUCATION

Ph.D. Cornell University, 1994
Graduate Field of Education; Ph.D. minor in Physics

Dissertation: *Physics Students' Conceptual Change in a Microcomputer-Based Laboratory Course*. UMI Dissertations Publishing, # 9501227
Committee: William S. Carlsen, Kenneth A. Strike, Richard Galik

B.S. State University of New York at Albany, 1986
Major in Physics; minor in Mathematics. Degree awarded Magna Cum Laude
Presidential Award for Undergraduate Research

RESEARCH INTERESTS

Science education, engineering education, classroom discourse, student learning, philosophy and sociology of science.

RESEARCHER IDENTIFIERS

ORCID: <http://orcid.org/0000-0002-5027-593X>
ResearcherID: <http://www.researcherid.com/rid/D-1029-2013>
GoogleScholar: <https://scholar.google.com/citations?hl=en&user=thMISAgAAAAJ>
Research Gate https://www.researchgate.net/profile/Gregory_Kelly3

POSITIONS

2018–present Senior Associate Dean for Research, Outreach, and Technology
Distinguished Professor, Curriculum and Instruction (Science Education)
College of Education
The Pennsylvania State University

2010–2018 Associate Dean for Research, Outreach, and Technology
Professor, Curriculum and Instruction (Science Education)
College of Education

- The Pennsylvania State University
- 2007-2010 Department Head, Curriculum and Instruction
College of Education
The Pennsylvania State University
- 2004-present Professor of Science Education
Department of Curriculum and Instruction
College of Education
The Pennsylvania State University
- 1994-2004 Assistant/ Associate/Full Professor of Education
Department of Education
University of California Santa Barbara
- 1990-1994 Teaching Assistant & Instructor: Physics Department, Engineering Minority
Programs Office, and Pre-Freshman Summer Program; Cornell University
- 1986-1990 Physics and Chemistry Teacher
Teacher Educator and Coordinator for Science Education in Regional
Inspectorate,
Peace Corps Togo, West Africa

AWARDS

- 2020 Fellow, National Academy of Education
- 2018 Dr. John J. Gumperz Memorial Award for Distinguished Lifetime Scholarship,
Language and Social Processes Special Interest Group, American Educational
Research Association (AERA)
- 2018 University Faculty Way Paver Award, Council of College Multicultural
Leadership (CCML), Penn State University
- 2018 Named Distinguished Professor, College of Education, Penn State University
- 2015 Outstanding Researcher, College of Education, Penn State University
- 2014 Fellow of the American Educational Research Association (AERA)
- 2007 Outstanding Reviewer for *Educational Researcher*
- 1998-2000 National Academy of Education Postdoctoral Fellow
- 1999 Early Career Research Award
National Association for Research in Science Teaching
- 1995 & 1996 University of California Regents' Junior Faculty Fellowship

- 1995 Marvin and Ruth Glock Research Award for Outstanding Ph.D. Dissertation, Department of Education, Cornell University
- 1986 Recipient of the Presidential Award for Undergraduate Research, “Matching possibilities of the Schwarzschild and de Sitter metrics.” State University of New York at Albany

PUBLICATIONS

- Green, J. L., Baker, W. D., Chian, M., Vanderhoof, C., Hooper, L., Kelly, G. J., Skukauskaite, A., & Kalainoff, M. (2020). Studying the over-time construction of knowledge in education settings: A microethnographic-discourse analysis approach. *Review of Research in Education*, 44, 161—194. <http://doi.org/10.3102/0091732X20903121>.
- Cunningham, C. M., Lachapelle, C. P., Brennan, R. T., Kelly, G. J., San Antonio Tunis, C., & Gentry, C. A. (2020). The impact of engineering curriculum design principles on elementary students’ engineering and science learning. *Journal of Research in Science Teaching*, 57, 423-453. <https://doi.org/10.1002/tea.21601>
- Cunningham, C. M., & Kelly, G. J. (2020). Collective reasoning in elementary engineering education. In E. Manalo (Ed.) *Deeper learning, dialogic learning, and critical thinking* (pp. 339–355). New York, NY: Routledge.
- Kelly, G. J. (2019). Critical dialogues for emerging research agendas in science education. In V. Prain and B. Hand (Eds.), *Theorizing the future of science education research* (pp. 191–196). Cham, Switzerland: Springer. DOI: 10.1007/978-3-030-24013-4.
- Pierson, A. E., Clark, D. B., & Kelly, G. J. (2019). Learning progressions and science practices: Tensions in prioritizing content, epistemic practices, and social dimensions of learning. *Science & Education*. <https://doi.org/10.1007/s11191-019-00070-0>
- Licona, P., & Kelly, G. J. (2019). Translanguaging in a middle school science classroom: Constructing scientific arguments in English and Spanish. *Cultural Studies of Science Education*. <https://doi.org/10.1007/s11422-019-09946-7>.
- Cunningham, C. M., & Kelly, G. J., & Meyer, N. (2019, June). Affordances of Engineering for Elementary-aged English Learners (Fundamental, Diversity). Paper presented at 2019 American Society of Engineering Education Annual Conference & Exposition, Tampa, Florida. <https://peer.asee.org/32048>.
- Deng, Y., Kelly, G. J. (2019). The Influences of Integrating Reading, Peer Evaluation, and Discussion on Undergraduate Students’ Scientific Writing. *International Journal of Science Education*, 41, 1408-1433. <https://doi.org/10.1080/09500693.2019.1610811>.

- Kelly, G. J., & Cunningham, C. M., & (2019). Epistemic Tools in Engineering Design for K-12 Education. *Science Education*, 103, 1080-1111. DOI:10.1002/sce.21513.
- Kelly, G. J., & Green, J. L. (2019). Framing issues of theory and methods for the study of science and engineering education. In G. J. Kelly & J. L. Green (Eds.), *Theory and methods for sociocultural research in science and engineering education* (pp. 1-28). New York, NY: Routledge.
- Green, J. L. & Kelly, G. J. (2019). How we look at discourse: Definitions of sociolinguistic units. In G. J. Kelly & J. L. Green (Eds.), *Theory and methods for sociocultural research in science and engineering education* (pp. 264-270). New York, NY: Routledge.
- Kelly, G. J., & Green, J. L. (Eds.). (2019). *Theory and methods for sociocultural research in science and engineering education*. New York, NY: Routledge.
<https://www.crcpress.com/Theory-and-Methods-for-Sociocultural-Research-in-Science-and-Engineering/Kelly-Green/p/book/9780815351924>
- Deng, Y., Kelly, G. J., Xiao, L. (2019). The development of Chinese undergraduate students' competence of scientific writing in the context of advanced organic chemistry experiment course. *Chemistry Education Research and Practice*, 20, 270-287. DOI: 10.1039/C8RP00171E
- Kelly, G. J. (2018). Developing Epistemic Aims and Supports for Engaging Students in Scientific Practices, *Science & Education*, 27, 245-246. DOI: 10.1007/s11191-018-9974-y.
<http://rdcu.be/N5hu>.
- Hufnagel, E., Kelly, G. J., & Henderson, J. A. (2018). How the environment is positioned in the Next Generation Science Standards: A critical discourse analysis. *Environmental Education Research* 24:5, 731-753. <http://dx.doi.org/10.1080/13504622.2017.1334876>
- Kelly, G. J., & Licona, P. (2018). Epistemic practices and science education. In M. Matthews (Ed.), *History, philosophy and science teaching: New research perspectives* (pp. 139-165). Springer: Dordrecht. DOI: 10.1007/978-3-319-62616-1_5.
https://link.springer.com/chapter/10.1007/978-3-319-62616-1_5
- Hufnagel, E., & Kelly, G. J. (2018). Examining emotional expressions in discourse: Methodological considerations. *Cultural Studies of Science Education*, 13, 905-924. DOI: 10.1007/s11422-017-9806-4
- Hertel, J. D., Cunningham, C. M., & Kelly, G. J. (2017). The roles of engineering notebooks in shaping elementary engineering student discourse and practice. *International Journal of Science Education*, 39, 1194-1217. <http://dx.doi.org/10.1080/09500693.2017.1317864>
- Kelly, G. J., Cunningham, C. M., & Ricketts, A. (2017). Engaging in identity work through engineering practices in elementary classrooms. *Linguistics & Education*, 39, 48-59.
<https://doi.org/10.1016/j.linged.2017.05.003>

- Cunningham, C. M., & Kelly, G. J. (2017). Epistemic practices of engineering for education. *Science Education*, 101, 486-505. Doi.org/10.1002/sce.21271.
- Sezen-Barrie, A., & Kelly, G. J. (2017). From the teacher's eyes: A case study of teachers' use of informal formative assessments (IFAs) and understanding the challenges of effective implementation. *International Journal of Science Education*. 39, 181-212.
<http://dx.doi.org/10.1080/09500693.2016.1274921>
doi.org/10.1080/09500693.2016.1274921.
- Cunningham, C. M., & Kelly, G. J. (2017). Framing engineering practices in elementary school classrooms. *International Journal of Engineering Education*, 33(1), 295-307.
- Kelly, G. J. (2016). Learning science: Discourse practices. In S. May, S. Wortham, & D. Kim (Eds.) *Encyclopedia of language and education, Vol. 3: Discourse and education* (pp. 1-15). New York: Springer. [doi:10.1007/978-3-319-02322-9_29-1](https://doi.org/10.1007/978-3-319-02322-9_29-1)
- Kelly, G. J. (2016). Inquiry teaching and learning in science education. In M.A. Peters (ed.), *Encyclopedia of educational philosophy and theory*. Singapore: Springer. Doi: 10.1007/978-981-287-532-7_36-1.
- Kelly, G. J. (2016). Methodological considerations for the study of epistemic cognition in practice. In J. A. Greene, W.A. Sandoval, & I. Braten (Eds.) *Handbook of epistemic cognition* (pp. 393-408). New York: Routledge.
- Kelly, G. J. (2015). Sociology of science and science education. In R. Gunstone (Ed.) *Encyclopedia of science education* (pp. 996-998). Dordrecht: Springer.
<http://www.springerreference.com/docs/html/chapterdbid/303137.html>
- Kelly, G. J. (2015). Discourse and science learning. In R. Gunstone (Ed.) *Encyclopedia of science education*. (pp. 332-335). Dordrecht: Springer.
<http://www.springerreference.com/docs/html/chapterdbid/302959.html>
- Kelly, G.J. (2014). Inquiry teaching and learning: Philosophical considerations. In M. Matthews (ed.), *International handbook of research in history, philosophy and science teaching*, (pp. 1363-1380). Springer: Dordrecht.
- Kelly, G. J. (2014). Discourse practices in science learning and teaching. In N. G. Lederman & S. K. Abell (eds.), *Handbook of research on science education, volume 2*, (pp. 321-336). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kelly, G.J. (2014). The social bases of disciplinary knowledge and practice in Productive Disciplinary Engagement. *International Journal of Education Research*, 64, 211-214.
- Kelly, G.J. (2014). Analysing classroom activities: Theoretical and methodological considerations. In C. Bruguière, A. Tiberghien, & P. Clément (Eds.) *Topics and trends in current science education: 9th ESERA conference selected contributions* (pp. 353-368). Dordrecht: Springer.

- Venturini, P., Tiberghien, A., von Aufschnaiter, C., Kelly, G. J., Mortimer, E. (2014). Analysis of teaching and learning practices in physics and chemistry education: Theoretical and methodological issues. In C. Bruguière, A. Tiberghien, & P. Clément (Eds.) *Topics and trends in current science education: 9th ESERA conference selected contributions* (pp. 469-485). Dordrecht: Springer.
- Sezen-Barrie, A., Tran, M.-D. T, McDonald, S., & Kelly, G.J. (2014). A cultural historical activity theory perspective to understand preservice science teachers' reflections on and tensions during micro-teaching experience. *Cultural Studies of Science Education*. 9, 675-697.
- Kelly, G. J. (2014). [Review of the book *Conceptual Profiles: A Theory of Teaching and Learning Scientific Concepts*]. *Science & Education*, 23, 1957-1960.
- Vieira, R.D. & Kelly, G.J., (2014). Multi-level discourse analysis in a physics teaching methods course from the psychological perspective of activity theory. *International Journal of Science Education*, 36, 2694-2718.
- Kang, E. J. S., Bianchini, J. A., & Kelly, G.J. (2013). Crossing the border from science student to science teachers: Preservice teachers' views and experiences learning to teach inquiry. *Journal of Science Teacher Education*, 24, 427-447.
- Kerlin, S. C., Carlsen, W. S., Kelly, G. J., & Goehring, E. (2013). Global learning communities: A comparison of online domestic and international science class partnerships. *Journal of Science Education and Technology*, 22, 475-487.
- Vieira, R.D., Kelly, G.J., & Nascimento, S. S. (2012). An activity theory-base analytic framework for the study of discourse in science classrooms. *Ensaio: Pesquisa em Educação em Ciências*, 14(2), 13-46.
- Kelly, G.J. (2012). Developing critical conversations about identity research in science education. In M. Varelas (Ed.), *Identity construction and science education research: Learning, teaching, and being in multiple contexts*. (pp.185-192) Dordrecht: Springer.
- Kelly, G. J. (2012). Expanding discourse repertoires with hybridity. *Cultural Studies in Science Education*, 7, 535-539.
- McDonald, S., & Kelly, G.J. (2012). Beyond Argumentation: Sense Making Discourse in the Science Classroom. In M. S. Khine (ed.), *Perspectives on scientific argumentation: Theory, practice and research* (pp. 265-281). Dordrecht: Springer.
- Kelly, G.J., McDonald, S., & Wickman, P. O., (2012). Science learning and epistemology. In K. Tobin, B. Fraser, & C. McRobbie, (Eds.) *Second international handbook of science education* (pp. 281-291). Dordrecht: Springer.

- Kelly, G. J. (2011). Scientific Literacy, discourse, and epistemic practices. In C. Linder, L. Östman, D. A. Roberts, P. Wickman, G. Erikson, & A. McKinnon (Eds.) *Exploring the landscape of scientific literacy* (pp. 61-73). New York, NY: Routledge.
- Kerlin, S., McDonald, S., & Kelly, G.J. (2010). Complexity of secondary scientific data sources and students' argumentative discourse. *International Journal of Science Education*, 32, 1207-1225.
- Kelly, G.J. & Sezen, A. (2010). Activity, discourse, & meaning: Some directions for science education. In Roth, W.-M. (Ed.) *Re/Structuring science education, ReUniting sociological and psychological perspectives* (pp. 39-52). Springer: Dordrecht.
- Gomes, M. F. C., Mortimer, E. F., & Kelly, G.J. (2010). Contrasting stories of inclusion/exclusion in the chemistry classroom. *International Journal of Science Education*, 32, 1207-1225.
- Luke, A., Green, J., & Kelly, G. J., (2010). What counts as evidence and equity? *Review of Research in Education*, 34, vii-xvi.
- Kelly, G. J., Bazerman, C., Skukauskaite, A., & Prothero, W. (2010). Rhetorical features of student science writing in introductory university oceanography. In C. Bazerman, R. Krut, K. Lunsford, S. McLeod, S. Null, P. Rogers, & A. Stansell (Eds.) *Traditions of writing research* (pp. 265-282). New York: Routledge.
- Kerlin, S., McDonald, S., & Kelly, G.J. (2008). Mapping a science inquiry unit. *Journal of Classroom Interaction*, 43(2).
- Kelly, G. J. (2008). Publishing in science education. *Science Education*, 92, 969-972.
- Prothero, W., & Kelly, G. J. (2008). Earth data, science writing, and peer review in a large general education oceanography class. *Journal of Geoscience Education*, 56 (1), 61-72.
- Kelly, G. J., Luke, A., & Green, J. (2008). What counts as knowledge in educational settings: Disciplinary knowledge, assessment, and curriculum. *Review of Research in Education*, 32, vii-x.
- Kelly, G. J. (2008). Inquiry, activity, and epistemic practice. In R. Duschl & R. Grandy (Eds.) *Teaching scientific inquiry: Recommendations for research and implementation* (pp. 99-117; 288-291). Rotterdam: Sense Publishers.
- Kelly, G. J. (2008). Learning science: Discursive practices. In A.-M. de Mejia & M. Martin-Jones (Eds.) *Encyclopedia of language and education, Vol. 3: Discourse and education* (pp. 329-340). New York: Springer.
- Kelly, G. J., Regev, J., & Prothero, W. A. (2008). Analysis of lines of reasoning in written argumentation. In S. Erduran & M.P. Jimenez-Aleixandre (Eds.), *Argumentation in science education: Recent developments and future directions*, (pp. 137-157). New York: Springer.

- Kelly, G. J. (2007). Scientific Literacy, discourse, and knowledge. In C. Linder, L. Östman and P. Wickman (Eds.) *Promoting Scientific Literacy: Science Education Research in Transaction, Proceedings of the Linnaeus Tercentenary Symposium* (pp. 47-55). Uppsala, Sweden: Geotryckeriet.
Available at <http://www.fysik.uu.se/didaktik/lsl/Web%20Proceedings.pdf>
- McDonald, S., & Kelly, G. J. (2007). Understanding the construction of a science storyline in a chemistry classroom. *Pedagogies* 2(3),165-177.
- Brown, B. A., & Kelly, G. J. (2007). When clarity and style meet substance: Language, identity, and the appropriation of science discourse. In W-M. Roth & K. Tobin (Eds.) *Science, learning, and identity: Sociocultural and cultural-historical perspectives*, (pp. 283-299). Rotterdam: Sense Publishers.
- Reveles, J. M., Kelly, G. J., & Durán, R. P. (2007). A sociocultural perspective on mediated activity in third grade science. *Cultural Studies in Science Education*, 1, 467-495.
- Kelly, G. J. (2007). Discourse in science classrooms. In S. K. Abell, & N. G. Lederman (Eds.), *Handbook of research on science education* (pp. 443-469). Mahwah, NJ: Lawrence Erlbaum Associates.
- Cunningham, C. M., Knight, M. T., Carlsen, W. S., & Kelly, G. (2007). Integrating engineering in middle and high school classrooms. *International Journal of Engineering Education*, 23 (1), 3-8.
- Kelly, G. J. (2006). [Review of the book *Science Education for Everyday Life: Evidence-Based Practice*], Teachers College Record. *Teachers College Record*, Date Published: February 27, 2006. <http://www.tcrecord.org> ID Number: 12336.
- Kelly, G. J. (2006) Epistemology and educational research. In J. Green, G. Camilli, & P. Elmore, (Eds.), *Handbook of complementary methods in education research* (pp. 33-55). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kelly, G. J. (2006). [Review of the book *Writing and Learning in the Science Classroom*], *International Journal of Science Education*, 28, 697-700.
- Lemke, J., Kelly, G. J., & Roth, W.-M. (2006). Forum: Toward a phenomenology of interviews. *Cultural Studies of Science Education* 1, 83-106.
- Kelly, G. J. (2005). [Review of the book *Meaning Making in Secondary Science Classrooms*], *Science Education*, 89, 875-877.
- Brown, B. A., Reveles, J. M., & Kelly, G. J. (2005). Scientific literacy and discursive identity: A theoretical framework for understanding science learning. *Science Education*, 89, 779-802.
- Schweizer, D. M., & Kelly, G. J. (2005). An investigation of student engagement in a global warming debate. *Journal of Geoscience Education*, 53 (1), 75-84.

- Kelly, G. J. (2005). Discourse, description, and science education. In R. Yerrick & W.-M. Roth (Eds.), *Establishing scientific classroom discourse communities: Multiple voices of research on teaching and learning* (pp. 79-108). Mahwah, NJ: Lawrence Erlbaum Associates.
- Reveles, J. M., Cordova, R., & Kelly, G. J. (2004). Science literacy and academic identity formulation. *Journal for Research in Science Teaching*, 41, 1111-1144.
- Takao, A. Y., & Kelly, G. J. (2003). Assessment of evidence in university students' scientific writing. *Science & Education*, 12, 341-363.
- Bianchini, J. A., & Kelly, G. J. (2003). Challenges of standards-based reform: The example of California's science content standards and textbook adoption process. *Science Education*, 87, 378-389.
- Kelly, G. J., & Brown, C. M. (2003). Communicative demands of learning science through technological design: Third grade students' construction of solar energy devices. *Linguistics & Education*, 13(4), 483-532.
- Kelly, G. J., & Bazerman, C. (2003). How students argue scientific claims: A rhetorical-semantic analysis. *Applied Linguistics*, 24(1), 28-55.
- Kelly, G. J., Bazerman, C., Skukauskaite, A., & Prothero, W. (2002). Rhetorical features of student science writing in introductory university oceanography. Proceedings of the *Ontological, Epistemological, Linguistic and Pedagogical Considerations of Language and Science Literacy: Empowering Research and Informing Instruction* conference, Dunsmuir Lodge, University of Victoria, September 12-15, 2002.
- Kelly, G. J., & Takao, A. Y. (2002). Epistemic levels in argument: An analysis of university oceanography students' use of evidence in writing. *Science Education*, 86, 314-342.
- Takao, A. Y., Prothero, W., & Kelly, G. J. (2002). Applying argumentation analysis to assess the quality of university oceanography students' scientific writing. *Journal of Geoscience Education*, 50(1), 40-48.
- Kelly, G. J., & Breton, T. (2001). Framing science as disciplinary inquiry in bilingual classrooms. *Electronic Journal of Literacy through Science*, 1(1).
<http://sweeneyhall.sjsu.edu/ejls/archives/bilingualism/index.html>
- Kelly, G. J., Crawford, T., & Green, J. (2001). Common tasks and uncommon knowledge: Dissenting voices in the discursive construction of physics across small laboratory groups. *Linguistics & Education*, 12(2), 135-174.
- Kelly, G. J., & Anderson, C. W. (2000). Learning with understanding. *Journal of Research in Science Teaching*, 37, 757-759.

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- Kelly, G. J., Brown, C., & Crawford, T. (2000). Experiments, contingencies, and curriculum: Providing opportunities for learning through improvisation in science teaching. *Science Education*, 84, 624-657.
- Crawford, T., Kelly, G. J., & Brown, C. (2000). Ways of knowing beyond facts and laws of science: An ethnographic investigation of student engagement in scientific practices. *Journal of Research in Science Teaching*, 37, 237-258.
- Kelly, G. J., & Chen, C. (1999). The sound of music: Constructing science as sociocultural practices through oral and written discourse. *Journal of Research in Science Teaching*, 36, 883-915.
- Putney, L., Green, J., Dixon, C., & Kelly, G. (1999). Evolution of qualitative research methodology: Looking beyond defense to possibilities. *Reading Research Quarterly*, 34, 368-377. Reprinted (2001) as Putney, L. G., Green, J. L., Dixon, C. N., & Kelly, G. J. (2001). Evolution of qualitative research methodology: Looking beyond defense to possibilities. In M. R. Jalongo, G. J. Gerlach, & W. Yan (Eds.), *Annual editions: Research methods* (1st ed., pp. 30-39). Guilford, CT: McGraw-Hill/Dushkin.
- Kelly, G. J., Chen, C., & Crawford, T. (1998). Methodological considerations for studying science-in-the-making in educational settings. *Research in Science Education*, 28(1), 23-49. Special Issue on Science and Technology Studies and Science Education, Wolff-Michael Roth (Guest Ed.).
- Kelly, G. J., Druker, S., & Chen, C. (1998). Students' reasoning about electricity: Combining performance assessments with argumentation analysis. *International Journal of Science Education*, 20, 849-871.
- Kelly, G. J., & Green, J. (1998). The social nature of knowing: Toward a sociocultural perspective on conceptual change and knowledge construction. In B. Guzzetti & C. Hynd (Eds.), *Perspectives on conceptual change: Multiple ways to understand knowing and learning in a complex world*. (pp. 145-181). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kelly, G. J., & Crawford, T. (1997). An ethnographic investigation of the discourse processes of school science. *Science Education*, 81(5), 533-559.
- Crawford, T., Chen, C., & Kelly, G. J. (1997). Creating authentic opportunities for presenting science: The influence of audience on student talk. *Journal of Classroom Interaction*, 32(2), 1-13.
- Kelly, G. J., & Green, J. (1997). What counts as science in high school and college classrooms? Examining how teachers' knowledge and classroom discourse influence opportunities for learning science. *Journal of Classroom Interaction*, 32(2), i-iii.

- Kelly, G. J. (1997). Research traditions in comparative context: A philosophical challenge to radical constructivism. *Science Education*, 81(3), 355-375.
- Green, J., Kelly, G. J., Castanheira, M. L., Esch, J., Frank, C., Hodel, M., Putney, L., & Rodarte, M. (1996). Conceptualizing a basis for understanding: What differences do differences make? *Educational Psychologist*, 31(3/4), 227-234.
- Green, J., Dixon, C., & Kelly, G. J. (1996). Constructing texts as opportunities for learning: Analysis of text construction practices across grade levels and disciplines. *Proceedings of the International Conference of Reform Issues on Teacher Education* (pp. 457-509). Taipei, Taiwan: Minister of Education.
- Kelly, G. J., & Crawford, T. (1996). Students' interaction with computer representations: Analysis of discourse in laboratory groups. *Journal of Research in Science Teaching*, 33(7), 693-707.
- Kelly, G. J., & Crawford, T. (1995). Computer representations in students' conversations: Analysis of discourse in small laboratory groups. In J. L. Schnase & E. L. Cunniss (Eds.), *Proceedings of the First International Conference on Computer Support for Cooperative Learning* (pp. 204-208). Mahwah, NJ: Lawrence Erlbaum Associates.
- Carlsen, W. S., Kelly, G. J., & Cunningham, C. M. (1994). Teaching ChemCom: Can we use the text without being used by the text? In G. Aikenhead & J. Solomon (Eds.), *STS Education: International perspectives on reform* (pp. 84-96). New York, NY: Teachers College Press.
- Kelly, G. J., Carlsen, W. S., & Cunningham, C. M. (1993). Science education in sociocultural context: Perspectives from the sociology of science. *Science Education*, 77, 207-220.

RECENT INVITED PRESENTATIONS AND WORKSHOPS

- Kelly, G. J. (2020). *Research Approaches for Examining Epistemic Cognition, Practices, and Tools in Science and Engineering Education*, Inquiry-Based Biology Education Research Group (Brazil), University of São Paulo (USP) via Zoom, June 19, 2020.
- Kelly, G. J. (2020). *Epistemic practices in science and engineering education*. Keynote presentation, Korean Association for Science Education (KASE). Scheduled for February 7, postponed due to coronavirus; delivered at Ewha Woman's University, Seoul, Korea February 4, 2020.
- Kelly, G. J. (2020). *Research methods for studying epistemic dimensions of science and engineering education*. Invited talk at Seoul National University Joint Symposium February 5, 2020.
- Kelly, G. J. (2019). *Using epistemic practices to engage all learners in science and engineering*. Invited talk at SMU Caruth Institute for Engineering Education, November 22, 2019.

Kelly, G. J. (2019). *Methodological considerations for researching epistemic practices in science and engineering education*. Invited talk at Universidade de Santiago de Compostela, Santiago de Compostela, Spain, September 12, 2019.

Kelly, G. J. (2019). *Epistemic practices in science and engineering education*. Invited talk at Stockholm University, Stockholm, Sweden, May 23, 2019.

Kelly, G. J. (2019). *Interdisciplinary (STEM) learning and research in the 21st Century: A conversation among scholars*. Presenter and lead panelist. Community Based Literacies & The Department of Education, Gevirtz Graduate School of Education, University of California, Santa Barbara.

RECENT PAPERS DELIVERED AT PROFESSIONAL MEETINGS

Cunningham, C. M., & Kelly, G. J., & Meyer, N. (2019, June). Affordances of Engineering for Elementary-aged English Learners (Fundamental, Diversity). Paper presented at 2019 ASEE Annual Conference & Exposition , Tampa, Florida. <https://peer.asee.org/32048>.

Kelly, G. J., Cunningham, C. M., Vanderhoof, C., & Licona, P.R. (2017). Learning Science through Engineering Design. Paper presented at the annual meeting of the NARST. San Antonio, TX.

Hertel, J. D., Cunningham, C. M., Kelly, G.J., & Lachapelle, C. P. (2016, June). The roles of engineering notebooks in shaping elementary engineering student discourse and practice. Paper presented at the annual meeting of the American Society of Engineering Education. New Orleans, LA.

Cunningham, C. M. & Kelly, G. J. (2016, April). *Epistemic practices of engineering*. Paper presented at the annual meeting of the NARST. Baltimore, MD.

Kelly, G. J. & Carlsen, W. S. (2016, April). *Learning epistemic practices and values of science through inquiry*. Presentation at Symposium - Nature of Science in the Next Generation Science Standards at the annual meeting of the NARST. Baltimore, MD.

Kelly, G. J., Cunningham, C. M. & Ricketts, A. R. (2016, April). *Emergence of an engineering identity in elementary students*. Paper presented at the annual meeting of the American Educational Research Association. Washington DC.

RECENT PROFESSIONAL ACTIVITIES

2017–present National Advisory Board, Smithsonian Science Education Center (SSEC),
Smithsonian Institution

2017–present Chair, Ad Hoc Advisory Group on Higher Education, Smithsonian Science
Education Center’s (SSEC), *Smithsonian Institution*

- 2016–present External Reviewer, *National Academy of Education/Spencer Foundation*,
Dissertation Fellowship program
- 2013–present Editorial Board Member, *EURASIA: Journal of Mathematics, Science, and
Technology Education*
- 2011–present Editorial Board Member, *Science Education*
- 2009–present Advisory Board, *International Journal of Instruction*
- 2014–2020 Executive Board Member, *NARST – A Worldwide Organization for Improving
Science Teaching and Learning through Research*
- 2015–2020 Secretary-Treasurer, *NARST – A Worldwide Organization for Improving Science
Teaching and Learning through Research*
- 2017–2019 Co-Chair, Website Committee, *NARST – A Worldwide Organization for
Improving Science Teaching and Learning through Research*
- 2017–2019 Associate Editor, *Science & Education*
- 2016,7,9 Mentor, Language and Social Processes Special Interest Group, *American
Education Research Association*
- 2013–2016 Advisory Board, *Science and Education*, *Journal of the International History*,
Philosophy, and *Science Teaching Group*.

PROFESSIONAL AFFILIATIONS

American Educational Research Association
Amnesty International
Association for the Education of Teachers of Science
International History, Philosophy, and Science Teaching Group
National Association for the Advancement of Colored People
National Association for Research in Science Teaching
Sigma Pi Sigma -- National Physics Honor Society
Union of Concerned Scientists

CURRENT PROFESSIONAL SERVICE (2019-20)

Dean's Advisory Committee, College of Education, Penn State University
College Research Advisory Committee (RAC) (chair), College of Education, Penn State
University
Education Outreach Advisory Board (chair), College of Education, Penn State University

University Research Advisory Committee, Penn State University
Social Science Research Institute, Associate Dean's Advisory, Penn State University
Digital Learning Academic Council, Penn State University
Chair, President's Award for Excellence in Academic Integration Announcement, Pennsylvania
State University