

GWENDOLYN M. LLOYD

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College of Education
The Pennsylvania State University
University Park, PA 16802

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EDUCATION

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|------|-------|---|
| 1996 | Ph.D. | Educational Studies (Mathematics Education), University of Michigan |
| 1993 | M.A. | Mathematics, University of California at Santa Barbara |
| 1991 | A.B. | Mathematics (with Honors), Bryn Mawr College |

PROFESSIONAL APPOINTMENTS

The Pennsylvania State University, University Park PA

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|----------------|---|
| 2018 - present | Director of Graduate Studies, Department of Curriculum & Instruction |
| 2017 - 2018 | Co-Director, Elementary and Early Childhood Education [PreK-4] Teacher Preparation Program, Department of Curriculum & Instruction |
| 2015 - present | Henry J. Hermanowicz Professor of Teacher Education, College of Education |
| 2010 - 2013 | Director, Elementary and Kindergarten Education [K-6] and Childhood and Early Adolescent Education [PreK-4, 4-8] Teacher Preparation Programs, Department of Curriculum & Instruction |
| 2009 - present | Professor of Education, Department of Curriculum & Instruction |

Virginia Polytechnic Institute and State University, Blacksburg VA

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| 2007 - 2009 | Professor of Mathematics, Department of Mathematics |
| 2001 - 2007 | Associate Professor of Mathematics, Department of Mathematics |
| 1996 - 2001 | Assistant Professor of Mathematics, Department of Mathematics |

HONORS AND AWARDS

- Faculty Marshal, College of Education, Penn State University, May 2017
- Henry J. Hermanowicz Endowed Chair, Penn State University, appointed 2015
- Cotterill Leadership Award, College of Education, Penn State University, 2013
- Undergraduate Program Leadership Award, Penn State University, 2013
- Alumni Award for Teaching Excellence, Virginia Tech, 2003

Certificate of Teaching Excellence, Virginia Tech, 2001
XCaliber Award, Center for Innovation in Learning, Virginia Tech, 1999
Outstanding Dissertation Award, Dept. of Educational Studies, University of Michigan, 1997
Philip Jones and Joseph Payne Award in Mathematics Education, University of Michigan, 1996
Charlotte Angas Scott Award in Mathematics, Bryn Mawr College, 1991

JOURNAL EDITORSHIPS AND EDITORIAL BOARD/PANEL ROLES

2017 - present	Associate Editor, <i>Review of Educational Research</i> Two-year Impact Factor: 8.985 Ranked 1 of 243 Education & Educational Research journals
2011 - 2018	Associate Editor, <i>Journal of Mathematics Teacher Education</i>
2010 - 2015	Co-Editor, <i>Journal of Teacher Education</i> Two-year Impact Factor: 3.263 Ranked 12 of 243 Education & Educational Research journals
2011 and 2018 – present	Editorial Board Member, <i>Journal of Mathematics Teacher Education</i>
2007 - 2009	Guest Editor, <i>Journal for Research in Mathematics Education</i> Ranked 15 of 243 Education & Educational Research journals
2007 - 2008	Chair of the Editorial Panel, <i>Journal for Research in Mathematics Education</i>
2005 - 2008	Editorial Panel Member, <i>Journal for Research in Mathematics Education</i>

PUBLICATIONS

Books

Lloyd, G. M., & Chapman, O. (Eds.). (2020). *International Handbook of Mathematics Teacher Education: Vol. 3: Participants in mathematics teacher education* (2nd ed.). Leiden, The Netherlands: Koninklijke Brill DV. doi.org/10.1163/9789087905491

Lloyd, G. M., Herbel-Eisenmann, B. A., & Star, J. (2011). *Developing essential understanding of expressions, equations, and functions for teaching mathematics in grades 6-8*. Reston, VA: National Council of Teachers of Mathematics.

Lloyd, G. M., & Pitts Bannister, V. R. (Eds.). (2011). *Curriculum based activities and resources for preservice math teachers*. Reston, VA: National Council of Teachers of Mathematics.

Cooney, T. J., Beckmann, S., & Lloyd, G. M. (2010). *Developing essential understanding of functions for teaching mathematics in grades 9-12*. Reston, VA: National Council of Teachers of Mathematics.

Remillard, J. T., Herbel-Eisenmann, B. A., & Lloyd, G. M. (Eds.). (2009; paperback 2011).

Mathematics teachers at work: Connecting curriculum materials and classroom instruction (Studies in mathematical thinking and learning, A. Schoenfeld, Series Ed.). New York: Routledge.

Book Chapters

- Murphy, P. K., Firetto, C. M., Lloyd, G. M., Wei, L., & Baszczewski, S. (forthcoming Jan-Mar 2020). Classroom discussions. In L. Zhang (Ed.), *Oxford research encyclopedia of education*. New York: Oxford University Press.
- Lloyd, G. M. (2020). Collaborative roles and contexts for participation in mathematics teacher education. In G. M. Lloyd & O. Chapman (Eds.), *International Handbook of Mathematics Teacher Education: Vol. 3: Participants in mathematics teacher education* (2nd ed., pp. 1-11). Leiden, The Netherlands: Koninklijke Brill DV. doi.org/10.1163/9789087905491
- Rice, C. L., & Lloyd, G. M. (2020). School and university-based mathematics teacher educators' shared expertise in a third space. In G. M. Lloyd & O. Chapman (Eds.), *International Handbook of Mathematics Teacher Education: Vol. 3: Participants in mathematics teacher education* (2nd ed., pp. 265-285). Leiden, The Netherlands: Koninklijke Brill DV. doi.org/10.1163/9789087905491
- Lloyd, G. M. (2019). Revising and resubmitting: Building on rejection. In K. R. Leatham (Ed.), *Designing, conducting, and publishing quality research in mathematics education* (Research in Mathematics Education Series, J. Cai & J. Middleton, Eds., pp. 227-240). New York: Springer Nature. doi.org/10.1007/978-3-030-23505-5_16
- Lloyd, G. M., Cai, J., & Tarr, J. (2017). Issues in curriculum studies: Evidence-based insights and future directions. In J. Cai (Ed.), *First compendium of research on mathematics teaching and learning* (pp. 824-852). Reston, VA: National Council of Teachers of Mathematics.
- Lloyd, G. M., Coon-Kitt, M. J., Margusity, L., Romig, G., & Hall, K. (2017). Collaboration in a school-university partnership: A focus on preservice teachers' learning about mathematics curriculum. In M. Boston and L. West (Eds.), *Reflective and collaborative processes to improve mathematics teaching* (Annual Perspectives in Mathematics Education [APME], pp. 215-226). Reston, VA: National Council of Teachers of Mathematics.
- Lloyd, G. M. (2011). Textbooks and curriculum materials in mathematics teacher education: Preservice teachers' learning about important principles for school mathematics. In G. Lloyd & V. Pitts Bannister (Eds.), *Curriculum-based activities and resources for preservice math teachers* (pp. 3-10). Reston, VA: National Council of Teachers of Mathematics.
- Lloyd, G. M. (2011). The Assessment Principle: Broadening preservice teachers' views of assessment through engagement with curriculum materials. In G. Lloyd & V. Pitts Bannister (Eds.), *Curriculum-based activities and resources for preservice math teachers* (pp. 69-79). Reston, VA: National Council of Teachers of Mathematics.
- Lloyd, G. M. (2011). Teacher educators' access to curricular resources: Online access to the history and development of *Standards*-based programs, sample materials, and technological tools. In G. Lloyd & V. Pitts Bannister (Eds.), *Curriculum-based activities and resources for*

preservice math teachers (pp. 111-115). Reston, VA: National Council of Teachers of Mathematics.

- Lloyd, G. M., & Pitts Bannister, V. R. (2010). Secondary curriculum materials as tools for teacher learning. In R. Reys & B. Reys (Eds.), *Mathematics curriculum: Issues, trends and future directions* (NCTM 72nd Yearbook, pp. 321-336). Reston, VA: National Council of Teachers of Mathematics.
- Lloyd, G. M., Remillard, J. T., & Herbel-Eisenmann, B. A. (2009). Teachers' use of curriculum materials: An emerging field. In J. T. Remillard, B. A. Herbel-Eisenmann, & G. M. Lloyd (Eds.), *Mathematics teachers at work: Connecting curriculum materials and classroom instruction* (Studies in Mathematical Thinking and Learning Series, A. Schoenfeld, Ed., pp. 3-14). New York: Routledge.
- Behm, S. L., & Lloyd, G. M. (2009). Factors influencing student teachers' interactions with mathematics curriculum materials. In J. T. Remillard, B. A. Herbel-Eisenmann, & G. M. Lloyd (Eds.), *Mathematics teachers at work: Connecting curriculum materials and classroom instruction* (Studies in Mathematical Thinking and Learning Series, A. Schoenfeld, Ed., pp. 205-222). New York: Routledge.
- Reys, B. J., Lloyd, G. M., Marrongelle, K., & Winsor, M. (2008). Induction of doctoral graduates in mathematics education into the profession. In R. Reys & J. Dossey (Eds.), *U. S. doctorates in mathematics education: Developing stewards of the discipline* (CBMS Issues in Mathematics Education, vol. 15, pp. 169-176). Washington, DC: American Mathematical Society / Mathematical Association of America.
- Lloyd, G. M. (2007). The challenges of preparing future teachers of K-12 mathematics. In E. S. Geller (Ed.), *Teaching excellence at a research-centered university: Energy, empathy, and engagement in the classroom* (pp. 155-159). Upper Saddle River, NJ: Pearson.
- Lloyd, G. M. (2006). Using K-12 mathematics curriculum materials in preservice teacher education: Rationale, strategies, and teachers' experiences. In K. Lynch-Davis, & R. L. Rider (Eds.), *The work of mathematics teacher educators: Continuing the conversation* (vol. 3, AMTE Monograph Series, pp. 11-27). San Diego, CA: Association of Mathematics Teacher Educators.
- Lloyd, G. M. (2002). Mathematics teachers' beliefs and experiences with innovative curriculum materials: The role of curriculum in teacher development. In G. Leder, E. Pehkonen, & G. Törner (Eds.), *Beliefs: A hidden variable in mathematics education?* (pp. 149-159). Utrecht, The Netherlands: Kluwer Academic Publishers.
- Lloyd, G. M., & Wilson, M. R. (2002). Using a card sort to determine one's understanding of function. In J. Sowder & B. Schappelle (Eds.), *Lessons learned from research* (pp. 209-212). Reston, VA: National Council of Teachers of Mathematics.

Journal Articles

- Lloyd, G. M., Rice, C. L., & McCloskey, A. V. (2019). Opportunities for professional learning about mathematics instruction: The role of joint work in student-teaching triads. *Journal of Mathematics Teacher Education*. doi.org/10.1007/s10857-019-09439-y

- Coon-Kitt, M. J., Lloyd, G. M., & Wolkenhauer, R., with Badiali, B., Bauer, D., Davenport, A., de Carle, A., Dewitt, K., Higgins, M., Hutchinson, D., Lynch, C., McDonald, C., Reitz, N., & Titus, N. (Spring 2019). The Pennsylvania State University and State College Area School District: Taking stock and looking to the future after 20 years of collaboration. *School-University Partnerships*, 12(1), 3-9.
- McCloskey, A., Lloyd, G., & Lynch, C. (2019). Theorizing mathematics instruction using ritual: Tensions in teaching fractions in a fifth grade classroom. *Educational Studies in Mathematics*, 101(2), 195-213. doi.org/10.1007/s10649-017-9779-y
- Lloyd, G. M., Coon-Kitt, M. J., Hassinger, H., & Roth, K. (October 2018). Open-strategy sharing to elicit multiple solutions. *Teaching Children Mathematics*, 25(2), 114-121. doi.org/10.5951/teachmath.25.2.0114
- Lloyd, G. M. (Jan/Feb 2018). Exploring student strategies. *Teaching Children Mathematics*, 24(4), 272. doi.org/10.5951/teachmath.24.4.0272
- Lloyd, G. M., Coon-Kitt, M.J., & Wolkenhauer, R. (2018). Embedded weeks in a PDS: Opening the door to deeper connections between methods courses and K-4 classrooms. *PDS Partners*, 13(2), 6-7.
- Lloyd, G. M. (2016). Examining mathematics teachers' conceptions, practices, and opportunities for change [Editorial]. *Journal of Mathematics Teacher Education*, 19(6), 499-501. doi.org/10.1007/s10857-016-9360-0
- Coon-Kitt, M. J., Nolan, J. F., Lloyd, G. M., & Romig, G. (2015). Professional development school triads inquiring about student work in elementary mathematics. *School and University Partnerships*, 8(2), 33-40.
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D. A., McDonald, S. P., Nolan, J., & Whitney, A. E. (2015). Five-year retrospective [Editorial]. *Journal of Teacher Education*, 66, 410-414. doi.org/10.1177/0022487115604839
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D. A., McDonald, S. P., Nolan, J., & Whitney, A. E. (2015). School-based teacher learning [Editorial]. *Journal of Teacher Education*, 66, 301-303. doi.org/10.1177/0022487115596828
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D. A., McDonald, S. P., Nolan, J., & Whitney, A. E. (2015). Contextualizing versus internationalizing research on teacher education: Competing or complementary goals [Editorial]. *Journal of Teacher Education*, 66, 197-200. doi.org/10.1177/0022487115580422
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D. A., McDonald, S. P., Nolan, J., & Whitney, A. E. (2015). Reconceptualizing teacher quality to inform preservice and inservice professional development [Editorial]. *Journal of Teacher Education*, 66, 105-108. doi.org/10.1177/0022487115570564
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D. A., McDonald, S. P., Nolan, J., & Whitney, A. E. (2015). Taking stock in 2015 [Editorial]. *Journal of Teacher Education*, 66, 3-6. doi.org/10.1177/0022487114561741

- Lloyd, G. M. (2014). Research into teachers' knowledge and the development of mathematics classroom practice [Editorial]. *Journal of Mathematics Teacher Education*, 17(5), 393-395. doi.org/10.1007/s10857-014-9285-4
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D., McDonald, S., & Nolan, J. (2014). Performance assessment of teaching: Implications for teacher education [Editorial]. *Journal of Teacher Education*, 65(5), 372-374. doi.org/10.1177/0022487114550475
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D., McDonald, S., & Nolan, J. (2014). Professional development and practices of teacher educators [Editorial]. *Journal of Teacher Education*, 65(4), 268-270. doi.org/10.1177/0022487114542220
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Gamson, D., McDonald, S., & Nolan, J. (2014). Taking stock in 2014 [Editorial]. *Journal of Teacher Education*, 65(3), 183-184. doi.org/10.1177/0022487114529540
- Knight, S. L., Lloyd, G. M., Arbaugh, F., McDonald, S. P., Nolan, J., & Whitney, A. E. (2014). Research as a catalyst for change [Editorial]. *Journal of Teacher Education*, 65(2), 86-87. doi.org/10.1177/0022487113519401
- Lloyd, G. M. (2013). The ongoing development of mathematics teachers' knowledge and practice: Considering possibilities, complexities, and measures of teacher learning [Editorial]. *Journal of Mathematics Teacher Education*, 16(3), 161-164. doi.org/10.1007/s10857-013-9239-2
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Edmondson, J., Nolan, J., McDonald, S. P., & Whitney, A. (2013). Talking across the disciplines [Editorial]. *Journal of Teacher Education*, 64, 376-377. doi.org/10.1177/0022487113500925
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Edmondson, J., McDonald, S. P., Nolan, J., & Whitney, A. (2013). Topics in teacher education research: What do we publish? [Editorial]. *Journal of Teacher Education*, 64, 292-293. doi.org/10.1177/0022487113495817
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Edmondson, J., McDonald, S. P., Nolan, J., & Whitney, A. (2013). Teacher learning and standards-based instruction [Editorial]. *Journal of Teacher Education*, 64, 200-201. doi.org/10.1177/0022487113480461
- Knight, S. L., Nolan, J., Lloyd, G., Arbaugh, F., Edmondson, J., & Whitney, A. (2013). Quality teacher education research: How do we know it when we see it? [Editorial]. *Journal of Teacher Education*, 64, 114-116. doi.org/10.1177/0022487112469941
- Arbaugh, F., Lloyd, G. M., Knight, S. L., Edmondson, J., Nolan, J., Whitney, A. E., & McDonald, S. (2013). Teacher learning and perceptions across the professional continuum [Editorial]. *Journal of Teacher Education*, 64, 6-7. doi.org/10.1177/0022487112462366
- Knight, S. L., Edmondson, J., Lloyd, G. M., Arbaugh, F., Nolan, J., Whitney, A. E., & McDonald, S. P. (2012). Examining the complexity of assessment and accountability in teacher education [Editorial]. *Journal of Teacher Education*, 63, 301-303. doi.org/10.1177/0022487112460200

- Lloyd, G. M., Arbaugh, F., Knight, S. L., Edmondson, J., Nolan, J., McDonald, S. P., & Whitney, A. E. (2012). Beyond the teacher certification program debate: From models to features [Editorial]. *Journal of Teacher Education*, *63*, 169-170. doi.org/10.1177/0022487112437717
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Edmondson, J., Nolan, J., McDonald, S. P., & Whitney, A. E. (2012). Adding to the knowledge base [Editorial]. *Journal of Teacher Education*, *63*, 85-86. doi.org/10.1177/0022487112438180
- Knight, S. L., Lloyd, G. M., Arbaugh, F., Edmondson, J., Nolan, J., McDonald, S. P., & Whitney, A. E. (2011). Advancing research, practice, and policy in teacher education [Editorial]. *Journal of Teacher Education*, *62*, 429. doi.org/10.1177/0022487111425783
- Lloyd, G. M. (2009). School mathematics curriculum materials for teachers' learning: Future elementary teachers' interactions with curriculum materials in a mathematics course in the United States. *ZDM - The International Journal on Mathematics Education*, *41*, 763-775. doi.org/10.1007/s11858-009-0206-4
- Lloyd, G. M. (2008). Teaching high school mathematics with a new curriculum: Changes to classroom organization and interactions. *Mathematical Thinking and Learning*, *10*, 163-195. doi.org/10.1080/10986060701854482
- Lloyd, G. M. (2008). Curriculum use while learning to teach: One student teacher's appropriation of mathematics curriculum materials. *Journal for Research in Mathematics Education*, *39*(1), 63-94.
- Lloyd, G. M. (2007). Strategic compromise: A student teacher's design of kindergarten mathematics instruction in a high-stakes testing climate. *Journal of Teacher Education*, *58*(4), 328-347. doi.org/10.1177/0022487107305260
- Lloyd, G. M. (2006). Preservice teachers' stories of mathematics classrooms: Explorations of practice through fictional accounts. *Educational Studies in Mathematics*, *63*(1), 57-87. doi.org/10.1007/s10649-005-9004-2
- Lloyd, G. M. (2005). Beliefs about the teacher's role in the mathematics classroom: One student teacher's explorations in fiction and in practice. *Journal of Mathematics Teacher Education*, *8*(6), 441-467. doi.org/10.1007/s10857-005-5120-2
- Lloyd, G. M., & Behm, S. L. (2005). Preservice elementary teachers' analysis of mathematics instructional materials. *Action in Teacher Education*, *26*(4), 48-62. doi.org/10.1080/01626620.2005.10463342
- Spielman, L. J., & Lloyd, G. M. (2004). The impact of enacted mathematics curriculum models on prospective elementary teachers' course perceptions and beliefs. *School Science and Mathematics*, *104*(1), 32-44. doi.org/10.1111/j.1949-8594.2004.tb17979.x
- Lloyd, G. M. (2002). Reform-oriented curriculum implementation as a context for teacher development: An illustration from one mathematics teacher's experience. *The Professional Educator*, *24*(2), 51-61.

- Lloyd, G. M., & Wilson, M. R. (2001). Offering prospective teachers the tools to connect theory and practice: Hypermedia in mathematics teacher education. *Journal for Technology and Teacher Education*, 9, 497-518.
- Lloyd, G. M., & Frykholm, J. A. (2000). On the development of “book smarts” in mathematics: Prospective elementary teachers’ experiences with innovative curriculum materials. *Issues in the Undergraduate Mathematics Preparation of School Teachers: The Journal*, 2.
- Lloyd, G. M., & Frykholm, J. A. (2000). How innovative middle school mathematics materials can change prospective elementary teachers’ conceptions. *Education*, 21, 575-580.
- Wilson, M. R., & Lloyd, G. M. (2000). The challenge to share mathematical authority with students: High school teachers reforming classroom roles. *Journal of Curriculum and Supervision*, 15, 146-169.
- Lloyd, G. M. (1999). Two teachers’ conceptions of a reform curriculum: Implications for mathematics teacher development. *Journal of Mathematics Teacher Education*, 2, 227-252. doi.org/10.1023/A:1009965804662
- Lloyd, G. M., & Wilson, M. (1998). Supporting innovation: The impact of a teacher’s conceptions of functions on his implementation of a reform curriculum. *Journal for Research in Mathematics Education*, 29, 248-274. doi.org/10.2307/749790

Peer-Reviewed Conference Proceedings

- Behm, S. L., & Lloyd, G. M. (2011). Preservice elementary teachers’ uses of mathematics curriculum materials: The role of disequilibrium and human resources. In L. R. Wiest & T. Lamberg (Eds.), *Proceedings of the 33rd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Reno, NV: University of Nevada, Reno.
- Behm, S. L., & Lloyd, G. M. (2007). Student teachers’ experiences with mathematics curriculum materials: Issues of autonomy and teacher learning. In D. K. Pugalee, A. Rogerson, & A. Schinck (Eds.), *Proceedings of the Ninth International Conference: Mathematics education in a global community* (pp. 69–74). Charlotte, NC: The Mathematics Education into the 21st Century Project.
- Lloyd, G. M., Wilson, M. Wilkins, J. L. M., & Behm, S. L. (Eds.), *Proceedings of the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Eugene, OR: All Academic.
- Lloyd, G. M., Herbel-Eisenmann, B. A., & Remillard, J. T. (2005). Researching teachers’ use of mathematics curriculum materials: Advancing the research agenda. In G. M. Lloyd, M. Wilson, J. L. M. Wilkins, & S. L. Behm (Eds.), *Proceedings of the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Eugene, OR: All Academic.
- Behm, S. L., & Lloyd, G. M. (2005). The issue of flexibility in one student teacher’s use of mandated curriculum materials and other instructional resources. In G. M. Lloyd, M. Wilson, J. L. M. Wilkins, & S. L. Behm (Eds.), *Proceedings of the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Eugene, OR: All Academic.

- Spielman, L. J., & Lloyd, G. M. (2005). Contextualizing “mathematics” in elementary teacher education. In G. M. Lloyd, M. Wilson, J. L. M. Wilkins, & S. L. Behm (Eds.), *Proceedings of the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Eugene, OR: All Academic.
- Lloyd, G. M. (2004). Mathematical authority in preservice elementary teachers’ experiences with Standards-based curriculum materials. In D. E. McDougall & J. A. Ross (Eds.), *Proceedings of the 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 3, pp. 1245-1252). Toronto: OISE/UT.
- Lloyd, G. M., & Herbel-Eisenmann, B. A. (2004). Standards-based curriculum materials and teachers. In D. E. McDougall & J. A. Ross (Eds.), *Proceedings of the 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 3, pp. 1285-1286). Toronto: OISE/UT.
- Behm, S. L., Lloyd, G. M., Spielman, L. J. (2004). Curriculum negotiation and the implementation of conceptually different materials. In D. E. McDougall & J. A. Ross (Eds.), *Proceedings of the 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 3, pp. 1300-1301). Toronto: OISE/UT.
- Lloyd, G. M., & Behm, S. (2002). The impact of experiences with mathematics textbooks and curriculum materials on preservice elementary teachers’ beliefs. In D. S. Mewborn, P. Sztajn, D. Y. White, H. G. Weigel, R. L. Bryant, & K. Nooney (Eds.), *Proceedings of the 24th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 3, p. 1241). Columbus, OH: The ERIC Clearinghouse for Mathematics, Science, and Environmental Education.
- Lloyd, G. M. (1999). Preservice teachers’ portrayals of classroom discourse: Allowing *students* to know and tell mathematics. In M. Santos (Ed.), *Proceedings of the 21st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 2, pp. 751-756). Columbus, OH: The ERIC Clearinghouse for Mathematics, Science, and Environmental Education.
- Lloyd, G. M. (1998). Using reform curriculum materials in teacher education: Relearning mathematics and pedagogy. In S. Berenson (Ed.), *Proceedings of the 20th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 2, pp. 742). Columbus, OH: The ERIC Clearinghouse for Science, Mathematics, and Environmental Education.
- Lloyd, G. M., & Wilson, M. R. (1997). The impact of teachers’ beliefs about student cooperation and exploration on their interpretations of a secondary mathematics curriculum. In J. Dossey (Ed.), *Proceedings of the 19th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 2, pp. 371-376). Columbus, OH: The ERIC Clearinghouse for Science, Mathematics, and Environmental Education.
- Lloyd, G. M. (1996). Change in teaching about functions: Content conceptions and curriculum reform. In E. Jakubowski, D. Watkins, & H. Biske (Eds.), *Proceedings of the 18th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 1, pp. 200-206). Columbus, OH: The ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

Lloyd, G., & Wilson, M. R. (1995). The role of one teacher's mathematical conceptions in his implementation of a reform-oriented functions unit. In D. T. Owens, M. K. Reed, & G. M. Millsaps (Eds.), *Proceedings of the 17th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 2, pp. 233-239). Columbus, OH: The ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

Wilson, M. R., & Lloyd, G. (1995). High school teachers' experiences in a student-centered mathematics curriculum. In D. T. Owens, M. K. Reed, & G. M. Millsaps (Eds.), *Proceedings of the 17th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (vol. 2, pp. 162-167). Columbus, OH: The ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

PRESENTATIONS

Research Presentations, Symposia, and Focus/Discussion Groups

Lloyd, G., & Rice, C. (2020, February). *Elementary preservice teachers' emergent knowledge of students as learners of mathematics*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Phoenix.

Murphy, P. K., Lloyd, G. M., & Quality Talk Team. (2019, March). *Advancing students' critical thinking through Quality Talk discussions in science and mathematics*. Presentation at the College of Education Discovery Summit, The Pennsylvania State University, University Park.

Murphy, P. K., Lloyd, G. M., & Quality Talk Team. (2018, November). *Quality Talk discussions: Promoting students' critical-analytic thinking*. Invited presentation for visitors from National Taiwan Normal University, College of Education, The Pennsylvania State University, University Park.

Lloyd, G. M. (2017, February). *Duoethnography of mathematics supervision in a professional development school*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Orlando.

Lloyd, G. M., Coon-Kitt, M. J., De Carle, A., & Higgins, M. (2016, October). *Joint observations of student teachers' instruction: A collaborative inquiry*. Presentation at the Teacher Education Assembly of the Pennsylvania Association of Colleges and Teacher Educators, Harrisburg.

Lloyd, G. M., Coon-Kitt, M. J., Margusity, L., & Romig, G. (2016, March). *School-university collaboration about K-5 mathematics curriculum*. Presentation at the National Association of Professional Development Schools, Washington, DC.

Lloyd, G. M., Wolkenhauer, R., Benson, W., Morton, A., & DeCarle, A. (2016, March). *Profiles of hybrid teacher educators in a K-4 professional development school partnership*. Presentation at the National Association of Professional Development Schools, Washington, DC.

Lloyd, G.M., Margusity, L., & Wolkenhauer, R. (2015, October). *Collaborative research as a site for professional learning in a school-university partnership*. Presentation at the Teacher Education Assembly of the Pennsylvania Association of Colleges and Teacher Educators, Harrisburg.

- Cai, J., Tarr, J., & Lloyd, G. M. (2015, April). *Research Issues in Curriculum Studies*. Symposium at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Boston.
- Lynch, C., Morgart, E., Schneider, L., & Lloyd, G. (2015, April). What role can lesson study play in novice teacher educators' learning and preparation to engage preservice teachers with important mathematical ideas? Roundtable session at the Spring PSU/SCASD Inquiry Conference, State College PA.
- Lloyd, G. M., & Lynch, C. (2015, February). *Collaboration around mathematics instruction: Professional learning in a PDS triad*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Orlando.
- Lloyd, G. M., McCloskey, A., & Lynch, C. (2014, April). *Descriptions of professional learning among members of professional development school triads*. Presentation at the annual meeting of the American Educational Research Association, Philadelphia.
- McCloskey, A., Lloyd, G. M., & Lynch, C. (2014, April). *Fractions, algorithms, and textbooks: Ritual aspects of a 5th grade classroom*. Presentation at the annual meeting of the American Educational Research Association, Philadelphia.
- McCloskey, A., Lloyd, G., & Lynch, C. (2014, April). *The ritual aspects of teaching fractions in a 5th-grade classroom*. Poster presentation at the annual meeting for the National Council of Teachers of Mathematics, New Orleans, LA.
- McCloskey, A., Lloyd, G. M., & Lynch, C. (2014, February). *Fractions, algorithms, story problems, and families: Learning to teach math in a 5th grade classroom*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Irvine CA.
- Arbaugh, F., Langrall, C., Lloyd, G. M., & Smith, P. (2013, January). *Publishing Research in Mathematics Teacher Education for Diverse Audiences*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Orlando FL.
- McCloskey, A., Yoder, G., & Lloyd, G. (2013, January). *Assessment for learning: Grading practices in methods courses at two universities and implications for equity*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Orlando FL.
- Lloyd, G. M., Herbel-Eisenmann, B. A., & Star, J. (2011, January). *Expressions, equations, and functions: Mathematical content knowledge for middle school teachers*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Irvine CA.
- McCloskey, A. V., Arbaugh, F., & Lloyd, G. M. (2011, January). *Student teachers and their mentors in mathematics teacher education: Preliminary findings from a research study*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Irvine CA.
- Lloyd, G. M., Pitts Bannister, V. R., Mariano, G., Herbel-Eisenmann, B. A., Drake, C., Land, T., & Arbaugh, F. (2010, January). *K-12 curriculum materials and textbooks as tools in mathematics teacher education*. Symposium at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Reys, B., Chval, K., Lloyd, G. M., Pitts Bannister, V. R., & Switzer, M. (2009, February). *Why curriculum matters in teacher education*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Orlando, FL.

- Wilson, P., Beckmann, S., Cooney, T., & Lloyd, G. M. (2009, April). *Essential Understandings Book Series: Professional Development Tools for Engaging Teachers with Mathematics, Grades 9-12*. Presentation at the annual conference of the National Council of Supervisors of Mathematics, Washington, DC.
- Lloyd, G. M. (2008, November). Invited speaker at the *ExCITE* conference at Michigan State University, East Lansing, MI.
- Lloyd, G. M. (2008, February). Invited co-leader of the *Teacher Learning* group at the Curriculum Research Conference, hosted by the Center for the Study of Mathematics Curriculum (CSMC), Phoenix, AZ. (with Kate Kline)
- Pitts Bannister, V. R., Lloyd, G. M., & Mariano, G. (2008). *Improving the learning of preservice secondary mathematics teachers through engagement with middle and high school curriculum materials*. Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Tulsa, OK.
- Behm, S. L., & Lloyd, G. M. (2007). *Student teachers' experiences with mathematics curriculum materials: Issues of autonomy and teacher learning*. Paper presented at the 9th International Conference of the Mathematics Education Into the 21st Century Project, Charlotte, NC.
- Lloyd, G. M. (2007). *Preservice teachers' views of Standards-based curriculum materials and traditional textbooks*. Paper presented in the symposium, *Teachers' use of Standards-based curriculum materials and traditional textbooks* (Chair: J. Moyer, Marquette University; Other participants: J. Cai, University of Delaware; B. Herbel-Eisenmann, Iowa State University), at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Atlanta, GA.
- Behm, S. L., & Lloyd, G. M. (2007). *Student teachers*. Paper presented in the symposium, *Mathematics teachers' curriculum use at different points on the professional continuum* (Chair: G. Lloyd; Other participants: C. Christou, University of Cyprus; T. Cooney, University of Georgia; E. Silver, V. Mills, H. Ghousseini, & C. Charalambous, University of Michigan), at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Atlanta, GA.
- Herbel-Eisenmann, B. A., & Lloyd, G. M. (Organizers). (2007). *Interactions between teachers and curriculum materials: Perspectives from research and practice* (Participants: T. Cooney, University of Georgia; B. Jaworski, Agder University College, Norway; D. Pimm, University of Alberta; J. Remillard, University of Pennsylvania; M. Schnepp, Holt Public Schools, MI; M. Larson, Lincoln Public Schools, NE; L. Davenport, Boston Public Schools, MA; E. Phillips, Vancouver Public Schools). Symposium conducted at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Atlanta, GA.
- Lloyd, G. M. (2007, September). Invited co-leader of the *Induction of Doctoral Graduates into the Profession* session at the National Conference on Doctoral Programs in Mathematics Education, Kansas City, MO. (with Barbara Reys)
- Lloyd, G. M. (2007, February). *Teachers' experiences with mathematics curriculum materials*. Invited colloquium presentation, Department of Mathematical Sciences, University of Delaware, Newark, DE.

- Lloyd, G. M. (2006, February). Invited discussion leader for the *Curriculum Implementation* group at the Curriculum Research Conference, hosted by the Center for the Study of Mathematics Curriculum (CSMC), Phoenix, AZ.
- Lloyd, G. M. (2005, February). Invited co-leader of the *Teachers, Teaching, and Curriculum* Working Group at the Curriculum Research Conference, hosted by the Center for the Study of Mathematics Curriculum (CSMC), Phoenix, AZ. (with B. Herbel-Eisenmann & J. Remillard)
- Lloyd, G. M., Herbel-Eisenmann, B. A., & Remillard, J. T. (2005). *Researching teachers' use of mathematics curriculum materials: Advancing the research agenda*. Paper presented at the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Roanoke, VA.
- Behm, S. L., & Lloyd, G. M. (2005). *The issue of flexibility in one student teacher's use of mandated curriculum materials and other instructional resources*. Paper presented at the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Roanoke, VA.
- Spielman, L. J., & Lloyd, G. M. (2005). *Contextualizing "mathematics" in elementary teacher education*. Paper presented at the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Roanoke, VA.
- Lloyd, G. M. (2005, January). *Mathematics teachers' use of Standards-based curriculum materials*. Invited colloquium presentation, Department of Curriculum and Instruction, Iowa State University, Ames, IA.
- Lloyd, G. M. (2004). *Research and instruction in dialogue: Exploring the use of reform-oriented curriculum materials with prospective elementary teachers*. Paper presented at the annual meeting of the Association of Mathematics Teacher Educators, San Diego, CA.
- Lloyd, G. M. (2004). *Mathematical authority in preservice elementary teachers' experiences with Standards-based curriculum materials*. Paper presented at the 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Toronto.
- Lloyd, G. M., & Herbel-Eisenmann, B. A. (2004). *Standards-based curriculum materials and teachers*. Paper presented at the 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Toronto.
- Behm, S. L., Lloyd, G. M., Spielman, L. J. (2004). *Curriculum negotiation and the implementation of conceptually different materials*. Paper presented at the 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Toronto.
- Lloyd, G. M. (2004). *Using Standards-based curriculum materials in preservice teacher education: Issues and questions*. Paper presented at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Behm, S., & Lloyd, G. M. (2004). *A mathematics project's impact on preservice teachers' notions of student thinking*. Paper presented at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.

- Spielman, L. J., & Lloyd, G. M. (2004). *Preservice teachers' observations of children's mathematical thinking*. Paper presented at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Lloyd, G. M. (2004, April). *Mathematics teachers and curriculum materials*. Invited presentation as part of the Colloquium Series, Department of Mathematics, Bryn Mawr College, Bryn Mawr, PA.
- Lloyd, G. M. (2004, May). Invited co-leader of the *Instructional Materials and Teachers Working Group* at the Second Show-Me Researchers Workshop, University of Missouri – Columbia. (with B. Herbel-Eisenmann).
- Spielman, L. J., Behm, S. L., & Lloyd, G. M. (2003). *Learning outcomes of alternative enacted curriculum models in a mathematics course for preservice elementary teachers*. Paper presented at the annual meeting of the American Association for Teaching and Curriculum, Baltimore, MD.
- Lloyd, G. M. (2003). *What preservice elementary teachers learn from their college mathematics textbooks*. Paper presented at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, San Antonio, TX.
- Lloyd, G. M., Behm, S., & Spielman, L. J. (2003). *Learning with and about mathematics curriculum*. Paper presented at the annual meeting of the Association of Mathematics Teacher Educators, Atlanta, GA.
- Lloyd, G. M. (2003, December). *On mathematics teachers and their textbooks: How experiences with innovative textbooks can help teachers to rethink mathematics and pedagogy*. Invited presentation as part of the Virginia Tech Faculty Research Series, co-sponsored by the Women's Center and the Organization of Women Faculty at Virginia Tech, Blacksburg.
- Lloyd, G. M., & Behm, S. (2002). *Prospective elementary teachers' ways of experiencing reform-oriented K-12 mathematics curriculum materials*. Paper presented in the symposium, *Beyond following the text: Perspectives on relationships between teachers and mathematics curriculum materials* (Chair: J. Remillard, University of Pennsylvania), at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Lloyd, G. M., & Behm, S. (2002). *The impact of experiences with mathematics textbooks and curriculum materials on preservice elementary teachers' beliefs*. Paper presented at the 24th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Athens, GA.
- Lloyd, G. M. (2001). *Teachers' views of the role of curriculum materials in mathematics teaching*. Paper presented at the annual meeting of the Association of Mathematics Teacher Educators. Costa Mesa, CA.
- Lloyd, G. M. (2000). *Narrative analysis in teacher education research: The meanings of complicating actions and resolutions in mathematics teachers' stories*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Lloyd, G. M., & Haynes, G. (2000). *The interplay of students and curriculum: One preservice teacher's developing view of his role in mathematics classroom discourse*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

- Lloyd, G. M. (1999; Invited). *Learning with and about mathematics curriculum: The role of teachers' conceptions*. Paper presented at the meeting, *Mathematical beliefs in the teaching and learning of mathematics*, at Oberwolfach Mathematics Research Institute, Germany.
- Lloyd, G. M. (1999). *Preservice teachers' portrayals of classroom discourse: Allowing students to know and tell mathematics*. Paper presented at the 21st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Cuernavaca, Mexico.
- Lloyd, G. M. (1998). *Using reform curriculum materials in teacher education: Relearning mathematics and pedagogy*. Paper presented at the 20th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Raleigh, NC.
- Lloyd, G. M. (Chair/Organizer). (1998). *Innovation in mathematics teacher education: New directions for research on teacher learning* (Participants: J. Frykholm, Virginia Tech; H. Borko, N. Perresini, E. Knuth, University of Colorado; D. Ball, University of Michigan). Symposium conducted at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Washington, DC.
- Lloyd, G. M., & Frykholm, J. A. (1998). *The role of curriculum in learning to teach mathematics*. Paper presented at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Washington, DC.
- Lloyd, G. M., & Wilson, M. R. (1998). *Context, representation, and authority: Illustrations of reform-oriented learning about mathematical functions*. Paper presented at the annual meeting of the American Educational Research Association, San Diego.
- Lloyd, G. M. (1997). *Teaching and learning through curriculum implementation: Teachers' beliefs about student learning in mathematics*. Paper presented at the annual meeting of the Eastern Educational Research Association, Hilton Head, SC.
- Lloyd, G. M., & Wilson, M. R. (1997). *The impact of teachers' beliefs about student cooperation and exploration on their interpretations of a secondary mathematics curriculum*. Paper presented at the 19th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Normal, IL.
- Wilson, M. R., & Lloyd, G. M. (1997). *Hypermedia creation: Helping prospective secondary teachers build flexible conceptions of mathematics and teaching*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Lloyd, G. (1996). *One veteran mathematics teacher's experiences with curriculum reform: Transforming instruction about functions*. Paper presented at the annual meeting of the American Educational Research Association, New York.
- Lloyd, G. M. (1996). *Change in teaching about functions: Content conceptions and curriculum reform*. Paper presented at the 18th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Panama City, FL.
- Lloyd, G., & Wilson, M. R. (1996). The experiences of teachers reforming mathematics instruction. Paper presented in the symposium, *Combining large-scale evaluation with focused research in reformed mathematics classrooms* (Chair: H. Schoen, University of Iowa), at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, San Diego, CA.

Lloyd, G., & Wilson, M. R. (1995). *The role of one teacher's mathematical conceptions in his implementation of a reform-oriented functions unit*. Paper presented at the 17th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH.

Wilson, M. R., & Lloyd, G. (1995). *High school teachers' experiences in a student-centered mathematics curriculum*. Paper presented at the 17th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH.

Professional Development for K-12 Teachers and Students

Quality Talk Team. (August 2019, October 2019). *Quality Talk discussions in teacher education*. Professional development sessions (3 days) with methods course instructors and mentor teachers in the K-4 PSU-SCASD Professional Development School Partnership. Part of NSF-funded IUSE project.

Pennsylvania Mathematics Initiative. (July 2014). *Mathematics as a Second Language*. Eberly College of Science, Penn State University.

Pennsylvania Mathematics Initiative. (July 2014). *Functions and Algebra*. Eberly College of Science, Penn State University.

SCASD Professional Development. (Nov. 1, 2013). *Identifying big ideas for responsive teaching using Math Expressions*, Mount Nittany Elementary School, State College PA.

Lloyd, G. M., & preservice secondary teachers at Virginia Tech. (annually Oct/Nov. 1999-2007). *Explorations of mathematics through tessellations*. Session at the "Women in Mathematics: Career Day at Virginia Tech" program for middle school girls, Blacksburg.

Lloyd, G. M. (2006, March). *Teachers and mathematics curriculum materials*. Presentation in the Research Symposium of the Annual Meeting of the Virginia Council of Teachers of Mathematics, Blacksburg.

Lloyd, G. M. (Organizer.). (2001, November). *Technology workshop for middle and high school mathematics teachers*. Conference for secondary mathematics teachers in Montgomery and Giles County Schools, Blacksburg.

Lloyd, G. M. (Organizer.). (2000, April). *Exploring mathematical relationships: A workshop in preparation for the world's largest math event*. Conference for K-12 teachers during Mathematics Awareness Week / Mathematics Education Month, Blacksburg.

Lloyd, G. M. (1999, March). *Real-world geometry for the middle grades*. Workshop at the annual meeting of the Virginia Council of Teachers of Mathematics, Roanoke.

Lloyd, G. M. (Organizer.). (1999, March). *Exploring mathematics in nature: A workshop in preparation for the world's largest math event*. Conference for K-12 teachers during Mathematics Awareness Week / Mathematics Education Month, Blacksburg.

Lloyd, G. M., Casey, D., Hicks, D., & Soares, D. (1998, November). *Integrating science, mathematics, and social studies in preservice teacher education*. Presentation at the "Team Building for Integration of High School Academics and Vocational Education" Conference, Blacksburg.

Lloyd, G. M., & Frykholm, J. A. (Organizers.). (1998b). *A preview to the world's largest math event for teachers: Connecting mathematics to the worlds of ancient and modern cultures*. Conference for elementary teachers during Mathematics Awareness Week, Blacksburg.

- Lloyd, G. M. (1997, November). *Multiplication algorithms: Recognizing important concepts in non-traditional methods*. Workshop conducted at the “Computation for Kids and Teachers” Working Day, Montgomery County Public Schools, Blacksburg.
- Lloyd, G. M., & Hagen, S. (1997, April). *A preview to the world’s largest mathematics event*. Workshop conducted with elementary teachers during Mathematics Awareness Week, Virginia Tech, Blacksburg.
- Lloyd, G. M., & Wilson, M. R. (1996, October). *Teachers’ experiences implementing a reform-oriented curriculum*. Presentation at the Leadership Conference of the Core-Plus Mathematics Project, Ann Arbor, MI.
- Lloyd, G. (1996, February). *Investigating relationships in data with computers*. Workshop conducted at the Forty-Sixth Annual Mathematics Education Conference, University of Michigan, Ann Arbor.
- Lloyd, G. (1995, February). *Integrating the curriculum: Incorporating reading, writing, and other disciplines into the mathematics classroom*. Workshop conducted at the Forty-Fifth Annual Mathematics Education Conference, University of Michigan, Ann Arbor.

GRANT FUNDING

Funded Projects

Enhancing Teacher Preparation in Elementary Mathematics through a Research-Based Framework for Teacher-Facilitated Discussions, 2019-2024, \$1,979,290

Co-Principal Investigator (Principal Investigator P. Karen Murphy)

National Science Foundation Improving Undergraduate STEM Education (IUSE: EHR)

Student Teachers and Their Mentors in the Practices of Mathematics Teacher Education, 2010-2011, \$17,540

Co-Principal Investigator (with F. Arbaugh and A. McCloskey)

Research Initiation Grant from the College of Education at Penn State

Improving the Learning of Preservice Secondary Mathematics Teachers through Engagement with Middle and High School Curriculum Materials, 2006-2010, \$100,000

Principal Investigator (co-Principal Investigator V. Pitts Bannister)

National Science Foundation Division of Undergraduate Education CCLI Program

Virginia Teach: Serving Mathematics Students in Need, 2008-2013, \$750,000

Co-Principal Investigator (Principal Investigator A. Norton)

National Science Foundation Robert C. Noyce Scholarship Program

Conference to Advance Research on Teachers’ Use of Curriculum Materials, 2006-2007, \$50,000

Co-Principal Investigator (with co-PIs B. Herbel-Eisenmann & J. Remillard)

National Science Foundation’s Teacher Professional Continuum (TPC) Program

Center for the Study of Mathematics Curriculum (CSMC), 2004-2009

Research Associate (Principal Investigator Hirsch, co-PIs Lappan, Reys; \$10,000,000 total)

National Science Foundation Center for Learning and Teaching (CLT)

Building a Theory of Teacher Learning With and About Mathematics Curriculum: The Role of Innovative K-12 Materials in Elementary Teacher Education, 2000-2006, \$435,000

Principal Investigator

National Science Foundation Early CAREER Development Program (EHR)

Proposals Under Review

Adapting Quality Talk Professional Development to Enhance Teachers' Mathematical Reasoning Pedagogy in Elementary Classrooms, 2020-2024

Co-Principal Investigator (Principal Investigator P. Karen Murphy)

National Science Foundation DRL Discovery Research K-12 (Requested \$2,999,933)

The PRISM Project: Development of a Mathematical Writing Intervention for Students with Disabilities, 2020-2023

Co-Principal Investigator (Principal Investigator Elizabeth Hughes)

Institution of Education Sciences, US Department of Education (Requested \$1,397,540)

DOCTORAL STUDENTS

Ph.D., Curriculum and Instruction (Mathematics Education), Penn State

Daniel Ozimek (chair), In progress

Students' conceptions of dimensional analysis as a method for calculating medication dosage

Assistant Professor of Mathematics, Pennsylvania College of Health Sciences, Lancaster

Yuriko Brown (chair), In progress

Instructor, Department of Mathematics, Penn State University (Altoona)

Emily Mainzer (chair), In progress

Amber Brass (committee member), In progress

Seonmi Do (committee member), In progress

Courtney Lynch Rice (chair), Ph.D., 2017

Collaborative planning for an elementary mathematics methods course in a third space: The role of expertise in a community of practice

Middle Grades Mathematics Teacher, Jemicy School, Maryland

Nursen Konuk (committee member), Ph.D., 2018

Mathematics teacher educators' roles, talks, and knowledge in collaborative planning practice: Opportunities for professional development

Assistant Professor, Dept. of Mathematics, Metropolitan State University of Denver

Tenille Cannon (committee member), Ph.D., 2016

Orientations toward mathematical processes of prospective secondary mathematics teachers as related to work with tasks

Assistant Professor, Dept. of Mathematics, Southern Utah University

Heather Ervin (committee member), Ph.D., 2015

The impact of instruction through models on preservice teachers' understanding of fraction multiplication and division

Assistant Professor, Dept. of Mathematics and Digital Sciences, Bloomsburg University

Ben Freeburn (committee member), Ph.D., 2015

Preservice secondary mathematics teachers' learning of purposeful questioning and judicious telling for promoting students' mathematical thinking

High School Mathematics and Statistics Teacher, Natomas Charter School, California

Maureen Grady (committee member), Ph.D., 2013

Students' conceptions of mathematics as sensible (SCOMAS) framework

Associate Professor, Dept. of Mathematics Education, Science Education, and Instructional Technologies, East Carolina University

Ph.D., Curriculum and Instruction (Curriculum & Supervision), Penn State

Azaria Cunningham (committee member), In progress

Donna Wynkoop (committee member), In progress

Middle Grades STEM Teacher, Waynesboro Area Middle School

Erin Morgart (chair), Ph.D., 2019

Developing elementary preservice teachers' mathematical knowledge for teaching: Engaging in an adapted lesson study cycle

Coordinator, K-4 Professional Development School, Penn State University

Waeodao Autid (chair), Ph.D., 2017

Mathematics teachers' classroom instruction after participating in a STEM education workshop in Thailand

Professional Development Official, Ministry of Education, Thailand

Mary Higgins (committee member), Ph.D., 2017

The influence of practitioner research on teacher candidates' beliefs

Assistant Principal, Academy of Advanced Learning, Colorado

Kelly Mark (committee member), Ph.D., 2016

Understanding mentoring practices in a professional development school partnership

Principal, Corl Street Elementary School, State College Area School District

M.J. Coon-Kitt (committee member), Ph.D., 2015

Inquiring about student work in a professional development school context: A case of cross-role triads

Coordinator, K-4 Professional Development School, Penn State University (retired)

Ph.D., Special Education, Dept. of Ed. Psychology, Counseling, & Special Education, Penn State

Joo-Young Lee (committee member), In progress

Lauren Cozad (committee member), Ph.D., 2019

Effects of a digital mathematics fluency program on the fluency and generalization of learners

Assistant Teaching Professor, Dept. of Educational Psychology, Counseling, & Special Education, Penn State University

Stephanie Morano (committee member), Ph.D., 2017

Effects of a fraction equivalence intervention combining CRA-I and number line representations

Assistant Professor, Dept. of Curriculum, Instruction, & Special Education, U. of Virginia

Jiwon Hwang (committee member), Ph.D., 2016

An examination of error patterns associated with middle school students' solution pathways when solving fraction computation involving addition

Lecturer, Dept. of Advanced Educational Studies, California State University, Bakersfield

Karen Fries (committee member), Ph.D., 2013

Effectiveness of mastering math facts on second- and third-grade students with specific learning disabilities in mathematics

Associate Professor, School of Education, Francis Marion University, South Carolina

Ph.D., Dept. of Mathematics, Virginia Tech

Olgamary Rivera-Marrero (chair), Ph.D., Mathematics, 2007

The place of discrete mathematics in the school curriculum: An analysis of preservice teachers' perceptions of the integration of discrete mathematics into secondary level courses

Professor, Department of Mathematics, University of Puerto Rico

Ph.D., Dept. of Teaching and Learning, Virginia Tech

Stephanie Behm Cross (chair), Ph.D., Curriculum & Instruction (Mathematics Education), 2008

Preservice elementary teachers' learning with mathematics curriculum materials during preservice teacher education

Associate Professor, Department of Middle and Secondary Education, Georgia State Univ.

Laura Jacobsen (chair), Ph.D., Curriculum & Instruction (Mathematics Education), 2006

Preservice teachers' characterizations of the relationships between teacher education program components: Program meanings and relevance and socio-political school geographies

Professor, Department of Mathematics and Statistics, Radford University, Virginia
Interim Dean of the College of Graduate Studies and Research, Radford University

Mary A. Quillen (co-chair), Ph.D., Curriculum & Instruction (Mathematics Education), 2004

Relationships among preservice elementary teachers' beliefs about mathematics, mathematics content knowledge, and previous mathematics course experiences

Director, University of Virginia Southwest Higher Education Center (retired)

Karl Kosko (comm. member), Ph.D., Curriculum & Instruction (Mathematics Education), 2010

Mathematical discussion and self-determination theory

Associate Professor, School of Teaching, Learning, & Curriculum Studies, Kent State U.

Lida Uribe-Flórez (comm. member), Ph.D., Curric. & Instruction (Mathematics Education), 2009

Teacher variables and student mathematics learning related to manipulative use

Chair and Associate Professor, Dept. of Educational Technology, Boise State University

Donna Watson (comm. member), Ph.D., Curriculum & Instruction (Mathematics Education), 2005

Learning mathematics in Appalachia: Life histories of beginning teachers

Dean, School of Education, Bluefield College, West Virginia (retired)

Rebecca Nelson (comm. member), Ph.D., Curric. & Instruction (Mathematics Education), 1998

Developing mathematical knowledge through class discussion: One teacher's struggles in implementing reform

Project Manager, Middle Matters Transition to Teaching Project, James Madison Univ.

Ed.D., Dept. of Teaching and Learning, Virginia Tech

Betti Kreye (comm. member), Ed.D., Curriculum & Instruction (Mathematics Education), 2009

Evaluation of the externship within a program for mathematics specialists

Clinical Assistant Professor, School of Education, Virginia Tech

TEACHING AND PROGRAM LEADERSHIP AT PENN STATE (2009-present)

Teaching

Instructor of mathematics education courses for preservice K-12 teachers – including methods courses co-taught with elementary teachers as part of the PSU-SCASD Professional Development School

Instructor of mathematics education, curriculum studies, and practitioner inquiry courses for graduate students – including online (World Campus) courses

Roles in Undergraduate Programs in Curriculum & Instruction

Professional Development Associate, PSU-SCASD Professional Development School [K-4], 2013-present

- Encourage, support, and offer research opportunities within the partnership
- Support the development of novice teacher educators and doctoral students engaged in the partnership
- Contribute to university-school relationships through collaborations with teachers, instructional coaches, and administrators
- Participate in community-building and professional development activities with supervisors, teachers, and preservice teachers (e.g., book clubs)

Co-Director, Elementary and Early Childhood Education [PreK-4] Program, 2017-2018

- Contributed to teacher education accreditation process through program area data collection and analysis and College-level review activities

- Co-facilitated monthly meetings of tenure line and fixed term faculty, including field experience supervisors, involved in the PreK-4 program
- Collaborated to coordinate program courses and field experiences across campuses
- Represented CEAED on Penn State's Professional Certification Coordination Council (PCCC)

Director, Elementary and Kindergarten Education [EKED, K-6] and Childhood and Early Adolescent Education [CEAED, PreK-4, 4-8] Teacher Education Programs, 2010-2013

- Coordinated transition from K-6 program to PrerK-4 and 4-8 programs in response to certification changes from the Pennsylvania Department of Education, including all program and course revisions
- Successfully completed program accreditation by producing a Specialized Program Area report for the National Association for the Education of Young Children (NAEYC) and contributing to College-wide review by the National Council for Accreditation of Teacher Education (NCATE)
- Led monthly meetings of tenure line and fixed term faculty, including field experience supervisors, involved in the PreK-4 program
- Led monthly meetings of program coordinators and advisers at Commonwealth campuses
- Organized and facilitated retreats each semester to facilitate program-specific discussions and planning among faculty at UP and Commonwealth campuses
- Conducted program work in collaboration with Field Experiences and Advising staff
- Reviewed petitions for course substitutions and transfer credits for students/advisers in EKED and CEAED
- Addressed individual preservice teachers needs and issues
- Served as representative of EKED and CEAED on Penn State's Professional Certification Coordination Council (PCCC)

Head, Discipline Inquiry Group (elementary mathematics, science, and social studies methods; mid-level field experience), Fall 2010

- Facilitated communication among methods course instructors and between methods course instructors and field supervisors
- Encouraged development of objectives to unify methods courses and field experiences

Roles in the Graduate Program in Curriculum & Instruction

Director of Graduate Studies, 2018-present

- Support graduate faculty and students in Ph.D., M.Ed., M.S., IUG programs, both residential and World Campus
- Update faculty and students regarding policy changes; revise program manuals, procedures, and forms as needed
- Collect and analyze data and develop required graduate program reports annually (e.g., Learning Objectives Assessment report)
- Plan and facilitate orientation for new graduate students, in collaboration with CIGSA graduate student leaders
- Address individual graduate student needs and issues; consult on advising and committee questions and concerns
- Serve as second reader for selected master's papers
- Teach C&I colloquium for all graduate students - includes SARI preparation
- Facilitate meetings of the graduate faculty once per semester; contribute to C&I advisory meetings and consult with department head monthly

- Support faculty in the preparation of College and University graduate student fellowships and awards (e.g., DGA, UGF, BW, etc.)
- Communicate with prospective graduate students and applicants about program elements and application requirements

Faculty Adviser, Curriculum & Instruction Graduate Student Association [CIGSA], 2019-present

- Work with graduate student leaders in efforts to promote inclusion within the C&I community (e.g., through orientation activities, peer mentoring, etc.)
- Promote opportunities for graduate students to share their perspectives and experiences and learn from peers and faculty

Graduate Faculty Member, Mathematics Education emphasis area, Department of Curriculum & Instruction, 2009-present

- Review master's and doctoral applications for graduate study in mathematics education; develop nominations for graduate student fellowships/awards
- Contribute to ongoing emphasis area planning (e.g., course offerings, staffing) and curricular revisions

Adviser and Faculty Member for Elementary Education and STEM areas, World Campus M.Ed. program, Department of Curriculum & Instruction, 2017-present

- Review applications for M.Ed. in elementary education
- Advise M.Ed. students (currently advising two M.Ed. students)

SERVICE ON COMMITTEES AT PENN STATE (2009-present)

University

2016-2017 University Graduate Council Joint Curricular Committee, Graduate School

College of Education

2018-present Curricular Affairs Committee
 2018-2019 "Place" Committee (for the redesign of Chambers Building)
 2017-2018 Professional Certification Coordinating Council
 2017-2018 Advisory Committee for Selection of Distinguished Professor of Education
 2016-2020 Promotion and Tenure Committee (Co-Chair, 2017-2018)
 2016-2019 Advisory Committee for Review of the Office of the Associate Dean for Research, Outreach, and Technology
 2016-2017 Faculty Council
 2016-2017 Curricular Affairs Committee
 2014-2015 Promotion and Tenure Committee (Co-Chair)
 2013-2015 Research Advisory Committee
 2013-2014 Strategic Planning Committee
 2010-2013 Professional Certification Coordinating Council
 2011-2013 Assessment Committee, College of Education
 2009-2010 Associate Dean Search Advisory Committee

- 2009-2010 Academic Adviser Search Committee
- 2009-2010 Elementary Mathematics Education Faculty Search Committee (Berks Campus)

Dept. of Curriculum and Instruction

- 2017-present Advisory Committee
- 2017-2018 Mathematics Education / Learning Sciences Tenure-Line Faculty Search Committee
- 2017-2018 Professional Development School [K-4] Fixed-Term Coordinator Search Committee
- 2016-2018 Social Studies Education Tenure-Line Faculty Search Committee
- 2014-2017 PSU-SCASD Inquiry Conference Planning
- 2014-2015 Professional Development School [K-4] Fixed-Term Coordinator Search Committee
- 2010-2014 Promotion and Tenure Committee (Chair 2011-2014)
- 2010-2013 Advisory Committee
- 2013-2014 Curriculum & Supervision Tenure-Line Faculty Search Committee
- 2011-2012 Elementary Science Education Tenure Line Faculty Search Committee (Co-Chair)

PROFESSIONAL AFFILIATIONS

- American Educational Research Association
 - Special Interest Group for Research in Mathematics Education
 - Division K Teaching & Teacher Education
 - Special Interest Group for Professional Development School Research
- Association of Mathematics Teacher Educators
- International Group for the Psychology of Mathematics Education, North American Chapter
- National Association of Professional Development Schools
- National Council of Teachers of Mathematics

PROFESSIONAL SERVICE

Committee Service and Conference Planning

- 2019-2022 Nominations and Elections Committee of the Association of Mathematics Teacher Educators (appointed)
- 2009-2010 Planning Committee, 10th Anniversary Graduate Research Conference of the Mid-Atlantic Center for Mathematics Teaching and Learning, August 2010
- 2008-2010 Research Committee of the Association of Mathematics Teacher Educators, (appointed)
- 2008-2009 Mathematics Education Mentoring Group (Co-Leader), Enhancing Diversity in Graduate Education [EDGE] for Women
- 2007-2008 Research Task Force of the Association of Mathematics Teacher Educators, (appointed)

- 2007-2009 Board of the Research in Mathematics Education Special Interest Group (SIG-RME) of the American Educational Research Association (elected)
- 2006-2008 Planning Committee, 2nd *International Conference on Mathematics Curriculum* (“Future Curricular Trends in School Algebra and Geometry”), sponsored by the Center for the Study of Mathematics Curriculum (CSMC), May 2008 at the University of Chicago
- 2005-2006 Organizer of Presession to the Research Meeting of CSMC, Feb. 2006, Phoenix AZ (with B. Herbel-Eisenmann & J. Remillard). NSF-funded authors’ meeting for the book, *Mathematics Teachers at Work: Connecting Curriculum Materials and Classroom Instruction*
- 2003-2005 Program Committee and Local Organizing Committee, 2005 Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Roanoke VA
- 2003-2004 Program Committee, 2004 Annual Meeting of the Association of Mathematics Teacher Educators, San Diego CA

Reviewer

Journals:

American Educational Research Journal
Cognition and Instruction
Educational Studies in Mathematics
Journal of Mathematics Teacher Education
Journal for Research in Mathematics Education
Journal of Teacher Education
Mathematical Thinking and Learning
Mathematics Teacher Educator
School Science and Mathematics Journal
ZDM: The International Journal on Mathematics Education

Annual Meetings:

American Educational Research Association - Research in Mathematics Education SIG
 American Educational Research Association - Professional Development School Research SIG
 North American Chapter of the International Group for the Psychology of Mathematics Education
 International Group for the Psychology of Mathematics Education
 Research pre-sessions of the National Council of Teachers of Mathematics

Grant Proposals:

National Science Foundation

Book manuscripts:

Routledge
Pearson
Eye on Education
Corwin Press

Service to Local Schools

Mathematics Curriculum and Instructional Support [K-5], Blacksburg New School, 2006-2009
 Member, K-12 Mathematics Curriculum Committee, State College Area Schools, 2014-2015