

Kristin Lesseig

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EDUCATION

- Ph.D. in Mathematics Education**, Oregon State University, Corvallis, OR.
 Dissertation: *Mathematical knowledge for teaching proof*. September 2011.
- M.A. in Mathematics**, University of Northern Colorado, Greeley, CO. Master's Project: *Ratios and Proportions in the Middle Grades*. August 1997.
- Teacher Certification – Secondary Mathematics**, Adams State College, Alamosa, CO. May, 1992. Additional physics endorsement added 1998.
- B.S. in Mathematics**, Truman State University, Kirksville, MO. May, 1988.

PROFESSIONAL EXPERIENCE

- 2011- **Washington State University Vancouver**, Department of Teaching & Learning
 Assistant Professor
- 2007-2011 **Oregon State University**, Science and Math Education Department
 Graduate Instructor. Teacher Supervisor.
- 2010 **University of Oregon**, College of Education
 Adjunct instructor.
- 1998-2007 **Del Norte High School**, Del Norte, CO
 Mathematics and Physics teacher.
 Mathematics Department Chair
- 2004-2007 **Adams State College**, Alamosa, CO - Teacher Education Department
 Adjunct Instructor.
- 1994-1998 **Del Norte Middle School**, Del Norte, CO
 Sixth grade mathematics and science teacher.
- 1992-1994 **Centennial Elementary**, San Luis, Colorado
 Mathematics specialist fourth-sixth grade.
- 1990-1992 **Adams State College**, Alamosa, CO - Mathematics Department
 Adjunct Instructor

PUBLICATIONS

Peer-Reviewed Journals

- Casey, S., **Lesseig, K.**, Monson, D., & Krupa, E. (accepted). Examining Preservice Secondary Mathematics Teachers' Responses to Student Work to Solve Linear Equations. *Mathematics Teacher Education and Development*.
- Lesseig, K.**, Slavit, D., & Holmlund Nelson, T. (2017). Jumping on the STEM bandwagon: How middle grades students and teachers can benefit from STEM experiences. *Middle School Journal* 48(3), 15-24.
- Lesseig, K.** & Krouss, P. (2017). Implementing a flipped instructional model in College Algebra: Profiles of student activity. *International Journal of Mathematical Education in Science and Technology* 48(2), 202-214. <http://dx.doi.org/10.1080/0020739X.2016.1233586>
- Lesseig, K.** (2016a). Fostering teacher learning of conjecturing, generalizing and justifying through Mathematics Studio. *Mathematics Teacher Education and Development* 18(1), 100-119.
- Lesseig, K.** (2016b). Conjecturing, generalizing and justifying: Building theory around teacher knowledge of proving. *International Journal of Mathematics Teaching and Learning* 17(3). <http://www.cimt.org.uk/ijmtl/index.php/IJMTL/index>
- Lesseig, K.** (2016c). Investigating Mathematical Knowledge for Teaching Proof in professional development. *International Journal of Research in Education and Science (IJRES)*, 2(2), 253-270.
- Lesseig, K.**, Casey, S., Monson, D., Krupa, E. & Huey, M. (2016). Developing an interview module to support secondary preservice teachers' noticing of student thinking. *Mathematics Teacher Educator* 5(1), 29-46.
- Lesseig, K.**, Elliott, R., Kazemi, E., Kelley-Petersen, M., Campbell, M., Mumme, J., & Carroll, C. (2016). Leader noticing of facilitation in videocases of mathematics professional development. *Journal of Mathematics Teacher Education*. Online first <http://dx.doi.org/10.1007/s10857-016-9346-y>
- Lesseig, K.**, Holmlund Nelson, T., Slavit, D., & Siedel, R.* (2016) Supporting Middle School Teachers' Implementation of STEM Design Challenges. *School Science and Mathematics* 116(4), 177-188.
- Slavit, D., Holmlund Nelson, T., & **Lesseig, K.** (2016). The teachers' role in developing, opening and nurturing an inclusive STEM-focused school. *International Journal of STEM Education* 3(1) 1-17 DOI: 10.1186/s40594-016-0040-5
- Slavit, D. & **Lesseig, K.** (2016). The development of teacher knowledge in support of student mathematical inquiry. *PRIMUS: problems, resources, and issues in mathematics undergraduate studies*. 27(1) 58-74. DOI: 10.1080/10511970.2016.1183156.
- Boston, M., Bostic, J., **Lesseig, K.**, & Sherman, M. (2015). A comparison of mathematics classroom observation protocols. *Mathematics Teacher Educator* 3(2), 154-175.

- DeChenne S.E, **Lesseig, K.**, Anderson, S, Staus, N., Li, S. & Barthel, C. (2012). Toward a measure of professional development for graduate student teaching assistants. *The Journal of Effective Teaching* 12(1), 4-19.
- Elliott, R., Kazemi, E., **Lesseig, K.**, Mumme, J., Carroll, C. & Kelley-Petersen, M. (2009) Conceptualizing the work of leading mathematical tasks in professional development. *Journal of Teacher Education*, 60(4), 364-379.
- Blubaugh, W. L., & **Emmons (Lesseig) K.** (1999). Graphing for All Students. *The Mathematics Teacher* 92(4), 323-326.

Peer-Reviewed Book Chapters

- Krupa, E., Huey, M., **Lesseig, K.**, Casey, S., & Monson, D. (2017). Investigating Secondary Preservice Teachers' Noticing of Students' Mathematical Thinking. In J. Cai & J. Middleton (Eds.) *Research in Mathematics Education Series Volume: Teacher Noticing: Bridging and Broadening Perspectives, Contexts, and Frameworks*. Springer Publications.
- Slavit, D., deVincenzi, A.,* **Lesseig, K.**, Nelson, T.H., & Ernst-Slavit, G. (2014). Developing an improving stance toward research in preservice teachers. In P. Blessinger & J. M. Carfora (Eds.) *Inquiry-Based Learning for the Arts, Humanities, and Social Sciences: A Conceptual and Practical Resource for Educators* (pp. 455-474). Bingley, U.K.: Emerald Publishing.
- Kazemi, E., Elliott, R., **Lesseig, K.**, Mumme, J., Carroll, C. & Kelley-Petersen, M. (2009). Doing mathematics in professional development: Working with leaders to cultivate mathematically rich teacher learning environments. In D. Mewborn & H. S. Lee (Eds.), *Association of Mathematics Teacher Educators Monograph VI: Scholarly practices and inquiry into the mathematics preparation of teachers*. (171-186). San Diego, CA: Association of Mathematics Teacher Educators.

Editor-Reviewed Book Chapters

- Slavit, D., deVincenzi, A.,* Akmal, T., & Lesseig, K. (accepted). Promoting community and core practices in a multi-site middle level mathematics program. In P. B. Howell, S. A. Faulkner, J. P. Jones, & J. Carpenter (Eds.) *Preparing Middle Level Educators for 21st Century Schools: Enduring Beliefs, Changing Times, Evolving Practices*. Charlotte, NC: Information Age Publishing.
- Kazemi, E., Elliott, R., Mumme, J., Carroll, C., **Lesseig, K.**, & Kelley-Petersen, M. (2010). Noticing leaders' interactions with videocases of teachers engaged in mathematical tasks in professional development. In M. Sherin, V. Jacobs, R. Philipp (Eds.) *Mathematics teacher noticing: Seeing through teachers' eyes*. (188-203). New York: Routledge.
- Elliott, R., **Lesseig, K.** & Kazemi, E. (2009). Sociomathematical norms in professional development: Examining leaders' use of justification and its implication for practice. In L. Knott (Ed.), *The role of mathematics discourse in producing leaders of discourse: A volume in The Montana Mathematics Enthusiast Journal monograph series in mathematics education (Vol. 5, 215-231)*, Charlotte, NC: Information Age Publishing.

Invited Papers

Siedel, R.,* **Lesseig, K.**, Holmlund Nelson, T., & Slavit, D. (2016) Research to Practice Article Implementing STEM Design Challenges in Classrooms. *School Science and Mathematics* (available online at: <http://ssma.play-cello.com/wp-content/uploads/2016/03/April2016Seidel-et-al-STEM-Design-Challenges-1.pdf>)

Proceedings, Peer-reviewed

Lesseig, K. (2011). Mathematical knowledge for teaching proof: Evidence from and implications for professional development. In L. Wiest & T. Lamberg (Eds.) *Proceedings of the thirty-third annual meeting of the North American Chapter of the International Group of the Psychology of Mathematics Education*. Reno, NV: University of Nevada, Reno.

Elliott, R., **Lesseig, K.**, Campbell, M. (2010). Teacher productions of algebraic generalizations and justification. In P. Brosnan, D. Erchick & L. Flevares (Eds.) *Proceedings of the thirty-second annual meeting of the North American Chapter of the International Group of the Psychology of Mathematics Education*.

MANUSCRIPTS UNDER REVIEW

Bostic, J., **Lesseig, K.**, Sherman, M. & Boston, M. (under review). Classroom observation tools used in mathematics education research: A current state of the field. *Journal for Research in Mathematics Education*.

Graham, M.* & **Lesseig, K.** (under review). Back-pocket strategies for argumentation. *Mathematics Teacher*.

Huggins, K.S., **Lesseig, K.**, & Rhodes, H.* (under review). Reconceptualizing the development of early career mathematics teachers as leaders. *International Journal of Teacher Leadership*.

Krouss, P. & **Lesseig, K.** (under review). Effects of a flipped classroom model in an introductory college mathematics course. *PRIMUS: problems, resources, and issues in mathematics undergraduate studies*.

Lesseig, K., Firestone, J., Morrison, J., Slavit, D., & Nelson, T. (under review). Nurturing STEM schools across K-12 contexts: The role of adaptive expertise. *International Journal of Science and Mathematics Education*.

Monson, D., Krupa, E., **Lesseig, K.** & Casey, S. (under review). Developing secondary preservice teachers' ability to respond to student work. *Journal of Mathematics Teacher Education*.

Staus, N., **Lesseig, K.**, & Lamb, R. (under review). Development of a measure of STEM interest for adolescents. *International Journal of Science and Mathematics Education*.

MANUSCRIPTS IN PREPARATION

- Lesseig, K.** & Staples, M. (in preparation). The argument for ‘argumentation’: Deliberations on terminology use to support k-12 teachers in developing practice. *For the Learning of Mathematics*.
- Nelson, T., **Lesseig, K.**, & Slavit, D. (in preparation). Making sense of STEM education in K-12 contexts. *International Journal of STEM Education*.
- Elliott, R., Campbell, M., & **Lesseig, K.**, (in preparation). Supporting productive disciplinary engagement in mathematics professional development. *Teaching and Teacher Education*.
- Rhodes, H., * **Lesseig, K.**, & Huggins, K. S. (in preparation). Co-learning through co-leading Mathematics Studio. *Journal of Research on Leadership Education*.

*graduate student co-author

EXTERNAL GRANTS

Co-Principal Investigator

Lesseig, K. & Whitlock, K. (2016-2017). *Transformative Mathematics Assessments (TMA)*. Project designed to support teachers’ ability to implement resources from the Smarter Balanced Digital Library and use formative assessment to differentiate instruction to meet the needs of diverse students in Ocean Beach School District. Funding: Washington Student Achievement Council \$100,000.

Principal Investigator

Lesseig, K. (2013-2015) *Increased STEM Achievement through multi-level Learning Inquiry Teams (STEM-LIT)*. In partnership with ESD-112, this project focused on deepening middle school teachers’ content knowledge in math and science through the development and implementation of STEM Design Challenges that align with Common Core State Standards for Mathematics and Next Generation Science Standards. Funding: National Science Foundation Math Science Partnership \$750,000.

INTERNAL GRANTS

Co-Principal Investigator

Krouss, P. & Lesseig, K. (2017-2018). *Creating a Flipped Classroom as an Open Education Resource*. Instructional improvement award to modify flipped instructional model and incorporate OER resources into Math 103 course. Funding: WSUV OER Development Grant \$5,000.

Principal Investigator

Lesseig, K. (2017). *Innovations in the Preparation of Secondary Mathematics Teachers*. International travel award to advance research on use of practice-based assignments to develop prospective secondary teachers’ professional noticing of student thinking. Research will compare studies from US secondary programs with similar intervention implemented at University of Notre Dame Australia. Funding: WSU International Research Travel Award \$4,700.

Co-Investigator

Dimitrov, A., Probst, T., Lesseig, K., MacLean, A., Umesh, U., & Erhlinger, J. (2016-2017) *Interventions to Instill a Growth Mindset among Students in Math-Intensive Gateway Courses*. An interdisciplinary research collaboration to investigate the effects of mindset interventions on students in math-intensive introductory courses across mathematics, psychology and business departments. Funding: WSU Student Success Seed Grant Competition \$23,743.

Co-Principal Investigator

Lesseig, K. & Krouss, P. (2014-2015). *Flipping the Classroom: A Study of Effectiveness and Systemic Improvement of Math 103 (Introduction to Algebraic Methods)*. An investigation of student activity within flipped versions of development mathematics courses and subsequent effects on student achievement, interest, attitude and future course taking. Funding: Samuel H. and Patricia W. Smith Teaching and Learning Grant \$7000.

Co-Principal Investigator

Lesseig, K. & Huggins, K. (2014-2015). *Teacher leader learning: Implementing the Common Core Standards for Mathematics*. Investigation of how Mathematics Studio, coupled with leadership focused professional learning opportunities, supports early career secondary mathematics teachers to lead instructional change. Funding: Washington State University Vancouver Faculty Research Mini-Grant \$3400.

Co-Principal Investigator

Nelson, T, Lesseig, K., & Slavits, D. (2014-2015). *Teacher and student learning through project-based STEM education*. Collaborative research to investigate teacher and student outcomes associated with implementation of STEM-focused projects across three area middle schools. Funding: WSU College of Education Faculty Funding Award \$9000.

Principal Investigator

Lesseig, K. (2012-2013). *Supporting teachers' attention to student conjectures, generalizations and justifications in mathematics classrooms*. Investigation of how Mathematics Studio, a school-based professional development model similar to lesson study, supports teachers' ability to both notice and elicit student conjectures, generalizations and justifications. Funding: Washington State University Faculty Seed Grant \$19,537.

UNFUNDED GRANTS

Lesseig, K. (2016). *Fostering Instructional Improvement Through Mathematics Studio*. Small Grants Program. Spencer Foundation. \$49,981 (not funded).

Lesseig, K. (2016). *Fostering School-wide Instructional Improvement Through Mathematics Studio*. Research-Practice Partnerships. Spencer Foundation. \$399,600 (not funded).

Slavits, D., Lesseig, K., Dimitrov, A. (2014). *Building quality and equity in STEM education*. Boeing Foundation. \$50,000 (not funded).

Slavits, D., Huggins, K. S., Lesseig, K., Nelson, T. H., & Ernst-Slavits, G. (2013). *Mapping systemic opportunities to learn mathematical and scientific practices*. Research on STEM Learning, National Science Foundation (NSF). \$1,499,902 (not funded).

Lesseig, K., Slavitt, D. & Dimitrov, A., (2012). *Supporting secondary mathematics teaching certification*. J. L. Stubblefield Trust and Bonnie and Clifford Braden Foundation. \$20,000 (not funded).

ADDITIONAL RESEARCH GRANT ACTIVITY

Evaluator

Hergert, J. (2013) *Making the Case: A media-based toolkit for implementing High School Common Core Standards in Mathematical Practice*. WGBH Educational Foundation project to develop multi-media resources for secondary education teachers to understand and use best practices for teaching mathematical argumentation to address Common Core State Standards. Funding: Arthur Vining Davis Foundation Award \$199,285.

Research Assistant

Mumme, J., Carroll, C., Kazemi, E., Elliott, R. (2007-2012). *Researching Mathematics Leader Learning*. (2007-2012). Five-year project investigating leaders' understandings and practices associated with developing mathematically rich learning environments for teachers. Funding: National Science Foundation Teacher Professional Continuum Grant. (ESI 0554186) \$2.2 million.

Research Assistant

Flick, L. & Elliott, R. (2008-2009). *Algebra in Context*. Three-year research and development grant to support high school mathematics, science and career & technical education teacher collaboration to increase student achievement in Algebra in a de-tracked, Gates Foundation small-school. Funding: Oregon ESEA Title II Mathematics and Science Partnership \$518, 698.

Evaluator

Dick, T. (2007-2009) *Oregon Mathematics Leader Institute*. Conducted observations of elementary and middle school classrooms as part of RMC Research Corporation's external evaluation of research and teacher development project. Funding: National Science Foundation \$5 million.

PRESENTATIONS

National and International Presentations

Burns, H.* & Lesseig, K. (June 2017). *Infusing Empathy into Engineering Design: Supporting Under-represented Student Interest and Sense of Belongingness*. Paper presented at ASEE Annual Conference, Columbus, OH.

Lesseig, K. & Huggins, K.S. (April 2017). *Leadership Identity: Reconceptualizing the Development of Early Career Mathematics Teachers*. Paper presented at the annual meeting of the American Educational Research Association (AERA), San Antonio, TX.

Lesseig, K., Bostic, J., Sherman, M., & Boston, M. (April 2017). *Classroom Observation Protocols: Choose Your Own Tool*. Presentation at the National Council of Teachers of Mathematics (NCTM), Research Conference, San Antonio, TX.

- Rhodes, H.,* Lesseig, K., Lewis, C., Gibbons, L., & Lenges, A., Lewis, B. (April 2017). *Classroom-based Professional Development Models*. Presentation at NCTM Research Conference, San Antonio, TX.
- Burns, H.,* & Lesseig, K. (April 2017). *Math interest: Mediating and moderating effects in STEM*. Poster presentation at NCTM Research Conference, San Antonio, TX.
- Holmlund Nelson, T., Lesseig, K. & Slavit, D. (March 2017). *Making Sense of STEM Education in K-12 Contexts and the Implications for Professional Development*. Presentation at the National Science Teachers Association (NSTA) National Conference, Los Angeles, CA.
- Lesseig, K., (July 2016). *Using Video to Support Teacher Inquiry and Noticing*. Presentation at the International Congress of Mathematics Education (ICME), Hamburg, Germany.
- Aaron, W.R., Campbell, M.P., Elliott, R., Kelemanik, G., Knapp, M., Lesseig, K., & Lucenta, A. (April 2016). *Ambitious Enactments in Secondary Math Methods Courses*. Presentation at the NCTM Research Conference, San Francisco, CA.
- Monson, D., Krupa, E., Lesseig, K., Huey, M., & Casey, S., (April 2016). *Investigating Secondary Preservice Teachers' Noticing of Student Thinking*. Presentation at the NCTM Research Conference, San Francisco, CA.
- Holmlund Nelson, T., Lesseig, K. & Slavit, D. (April 2016). *Varying conceptualizations of "STEM Education" and the implications for professional development*. Paper presented at NARST Annual International Conference, Baltimore, MD.
- Lesseig, K. & Slavit, D., & Holmlund Nelson, T. (January 2016). *Mathematics Teachers Making Sense of STEM Through the Use of Engineering Design Challenges*. Presentation at 20th annual conference of Association of Mathematics Teacher Educators, Irvine, CA.
- Monson, D., Casey, S., Lesseig, K., & Krupa, E. (January 2016). *Developing Secondary Preservice Teachers' Noticing of Students' Mathematical Thinking: A Focus on Responding*. Presentation at 20th annual conference of Association of Mathematics Teacher Educators, Irvine, CA.
- Ko, Y., Yee, S., Bleiler, Boyle, J., S., Rumsey, C., Whitacre, I., & Lesseig, K. (January 2016). *Supporting Teachers' Capabilities to Engage Students in Constructing Viable Arguments and Critiquing Others' Reasoning*, Presentation at 20th annual conference of Association of Mathematics Teacher Educators, Irvine, CA.
- Huggins, K., Lesseig, K., & Rhodes, H.* (January 2016). *Changing Identities: Supporting Early Career Mathematics Teachers' Leadership Development*. Paper presentation at Hawaii International Conference on Education. Honolulu, HI.
- Lesseig, K., (August 2015). *Teachers' Understanding of How to Foster Conjecturing, Generalizing, and Justifying in Middle Grades Mathematics*. Presentation at 2nd International Argument-Based Inquiry Conference. Spokane, WA.
- Lesseig, K., Rhodes, H.,* Elliott, R. & Aaron, W.R. (April 2015). *School Embedded Professional Development Models to Advance Instructional Practice*. Presentation at NCTM Research Conference, Boston, MA.

- Nelson, T. H., Lesseig, K., Slavit, D., Kennedy, C., & Seidel, R.* (April 2015). *Supporting Middle School Teachers' Implementation of STEM Design Challenges*. Individual paper presentation at NARST Annual Meeting, Chicago, IL.
- Monson, D., Casey, S., Lesseig, K., Huey, M., & Krupa, E. (February 2015). *Developing Secondary PSTs' Ability to Elicit and Notice Student Thinking: Developing a Task-Based Interview Module*. Presentation at 19th annual conference of Association of Mathematics Teacher Educators, Orlando, FL.
- Morrison, J., Firestone, J., Nelson, T., Lesseig, K., Slavit, D. (January 2015). *STEM Schools and Curricula: Research at the Elementary, Middle, and High School Levels*. Presentation at Association of Science Teacher Educators International Conference, Portland, OR.
- Lesseig, K. (April 2014). *Developing Teacher Learning Opportunities in Mathematics Studio*. Paper presented at NCTM Research Conference, New Orleans, LA.
- Lesseig, K. (February 2014). *Supporting Teachers' Attention to Student Conjectures, Generalizations and Justifications: Opportunities and Challenges in Professional Development*. Presentation at 18th annual conference of Association of Mathematics Teacher Educators, Irving, CA.
- Sherman, M., Lesseig, K., & Bostic, J., & Boston, M. (February 2014). *A Comparison of Commonly Used Mathematics Classroom Observation Protocols*. Presentation at 18th annual conference of Association of Mathematics Teacher Educators, Irving, CA.
- Lesseig, K. (April 2013). *Supporting the Development of Mathematical Knowledge for Teaching Proof in Professional Development*. In Session: The Complexity of Mathematics Leaders Learning to Facilitate Mathematical Knowledge for Teaching. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Lesseig, K. (April 2013). *Proof-Task Potential: Developing MKT for Proof in Professional Development*. Presentation at NCTM Research Pre-session, Denver, CO.
- Elliott, R., Lesseig, K., Seago, N., Kazemi, E., Carroll, C., Campbell, M. & Kelley-Petersen, M. (April 2013). *Supporting Math Leaders Learning Facilitation: Developing a Research Agenda*. Presentation at NCTM Research Pre-session, Denver, CO.
- Slavit, D., Roth McDuffie, A. & Lesseig, K. (January 2013). *Establishing STEM-Focused Schools with Diverse Student Populations*. Presentation at 17th annual conference of Association of Mathematics Teacher Educators, Orlando, FL.
- Kazemi, E., Lesseig, K., & Kelly-Petersen, M. (April 2012). *Using Videocases to Prepare Leaders of Professional Development in Mathematics*. Presentation at the annual meeting of the American Educational Research Association, Vancouver, BC. In Symposium Session: Issues in the Facilitation of Video-Based Professional Development
- Lesseig, K., Elliott, R., Lannin, J., Perkowski, M. (February 2012). *Promoting Mathematical Reasoning with Preservice and Inservice Mathematics Teachers*. Presentation at 16th annual conference of Association of Mathematics Teacher Educators, Fort Worth, TX.

- Perkowski, M., Lannin, J., Elliott, R. & Lesseig, K. (February 2012). *What Do We (Mathematics Teacher Educators) View as Valid Mathematical Justification?* Presentation at 16th annual conference of Association of Mathematics Teacher Educators, Fort Worth, TX.
- Kazemi, E., Elliott, R., Mumme, J., Carroll, C., Lesseig, K. & Kelley-Petersen, M. (April 2011). *Noticing Leaders' Thinking About Videocases of Teachers Engaged in Mathematics Tasks in Professional Development.* Presentation at the annual meeting of the American Educational Research Association, New Orleans, LA. In Session: Mathematics Teacher Noticing: Seeing Through Teachers' Eyes.
- Campbell, M., Lesseig, K., Perkowski, M., Elliott, R. & Lannin, J. (January 2011). *Establishing Valid Mathematical Justification for Teachers and Students.* Presentation at 15th annual conference of Association of Mathematics Teacher Educators, Irvine, CA.
- Elliott, R., Lesseig, K., Carroll, C., Kelley-Petersen, & Lannin, J. (January 2010). *Pursuing Mathematical Justification in Professional Development: Supporting Teachers' Specialized Content Knowledge.* Presentation at 14th annual conference of Association of Mathematics Teacher Educators, Irvine, CA.
- Kazemi, E., Carroll, C., Kelley-Petersen, M., Lesseig, K., Mumme, J., Sleep, L., Suzuka, K., Bass, H., Lewis, J., Ball, D.L. & Elliott, R. (January 2010). *Designing and Using Mathematical Tasks to Develop Specialized Content Knowledge for Teaching.* Presentation at 14th annual conference of Association of Mathematics Teacher Educators, Irvine, CA.
- Lesseig, K., Elliott, R., Kazemi, E., Mumme, J. & Carroll, C. (October 2010). *A Framework for Analyzing the Role of Justification in Professional Development.* Poster presentation at the 32nd annual conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH.
- Mumme, J., Carroll, C., Elliott, R., Kazemi, E., Lesseig, K., & Campbell, M. (October 2010). *Advancing Leaders' Capacity to Support Teacher Learning While Doing Mathematics.* Poster presentation at the 32nd annual conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH.
- Elliott, R., Campbell, M., Lesseig, K., Carroll, C., Mumme, J., Kazemi, E., & Kelley-Petersen, M. (October 2010). *Leaders' Sense Making of Frameworks for Facilitating Mathematical Working Professional Development.* Poster presentation at the 32nd annual conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH.
- Elliott, R., Kazemi, E., Lesseig, K., Kelly-Petersen, M., Carroll, C., & Mumme, J. (April 2010). *Developing and improving models for supporting mathematics teacher leaders.* Paper presented in session: Tomorrow's Promise: The Role of Teacher Leaders and the Influence of School Characteristics at the annual meeting of the American Education Research Association, Denver, CO.
- Elliott, R., Lesseig, K., Kazemi, E., Kelly-Petersen, M. (April 2009). *Sociomathematical Norms for Explanation in Professional Development: Opportunities for Teacher Leaders to Learn Mathematical Content for Teaching.* Presentation at the annual meeting of the American Educational Research Association, San Diego, CA. In Session: Teacher

Learning About Student Mathematical Thinking: A Discussion of Various PD Models and Research Methodologies.

DeChenne, S. (April 2009). *Graduate Student Teaching Training: Differences in Graduate Students' Training Needs*. Poster presentation at the annual meeting of the American Educational Research Association, San Diego, CA.

Lesseig, K., Elliott, R., & Mumme, J. (Feb. 2009). *What Constitutes Mathematical Justification for Leaders: Exploring Sociomathematical Norms in Professional Development*. Paper presented at the annual meeting of the Association of Mathematics Teacher Educators, Orlando, FL.

Regional and Local Presentations

Graham M.* & Lesseig, K. (March 2017). *Examining Teacher Learning through Mathematics Studio*. Poster presentation at Washington State University Academic Showcase. Pullman, WA.

Holmlund Nelson, T., Lesseig, K., Slavitt, D. (November 2016). *What does STEM education look like in a 6th-12th grade science classroom?* Presentation at National Science Teacher Association (NSTA) NW Conference, Portland, OR.

Burns, H.,* Lesseig, K., Staus, N., & Lamb, R. (November 2016). *STEM Interest: Science as a moderator*. Poster presentation at National Science Teacher Association (NSTA) NW Conference, Portland, OR.

Lesseig, K. (October 2016). *Strategies for Engaging Secondary Students in Conjecturing, Generalizing, and Justifying*. Presentation at 55th Northwest Mathematics Conference, Yakima, WA.

Slavitt, D., Lesseig, K. Holmlund Nelson, T., & deVincenzi, A.* (October 2016). *What is STEM Education? Views and Examples from the Field*. Presentation at 55th Northwest Mathematics Conference, Yakima, WA.

Burns, H.,* Lesseig, K., & Staus, N. (October 2016). *Girls' interest in STEM*. Paper presented at Frontiers in Education Conference, Erie, PA.

Holmlund Nelson, T., Lesseig, K., & Slavitt, D. (March 2016). *Making Sense of STEM Education: Professional Development and Classroom Implementation*. Poster presentation at Washington State University Academic Showcase. Pullman, WA.

Lesseig, K. (November 2015). *Conjecturing, Generalizing, Justifying Tasks: Interweaving Mathematical Content and Practices*. Presentation at Regional NCTM Conference and Exposition. Minneapolis, MN.

Krouss, P., & Lesseig, K. (October 2015). *Implementing a Flipped Instructional Model in College Algebra: Profiles of Student Activity*. Presentation at Technology-Enhanced Curricula in Higher Education (TECH-Ed) Conference, Pullman, WA.

Lesseig, K., & Rhodes, H.* (May 2015) *Understanding and Utilizing STEM K-8*. Presentation to Literacy Development for Educators Organization, Evergreen SD, Vancouver, WA.

- Holmlund Nelson, T., Lesseig, K., Slavitt, D., & Seidel, R.* (March 2015). *Middle School Teachers' Learning about STEM Education through the Implementation of Design Challenges*. Poster presentation at Washington State University Academic Showcase. Pullman, WA.
- Morrison, J., Firestone, J., Holmlund Nelson, T., Lesseig, K., & Slavitt, D. (March 2015). *STEM Schools: Research Across the Elementary, Middle, and High School Levels*. Poster presentation at Washington State University Academic Showcase. Pullman, WA.
- Lesseig, K., & Lenges, A. (October 2014). *Supporting Mathematical Argumentation Across the Grades*. Presentation at 53rd Northwest Mathematics Conference, Portland, OR.
- Lesseig, K., & Krouss, P. (September 2014) *Studying Flipped Instruction in Introductory Mathematics*. Poster presentation at Technology-Enhanced Curricula in Higher Education (TECH-Ed) Conference, Pullman, WA.
- Lesseig, K., & Lenges, A. (October 2013). *Conjecturing, Generalizing, Justifying Tasks: Interweaving Secondary Content and Practice Standards*. Presentation at 52nd Northwest Mathematics Conference, Bellevue, WA.
- Lesseig, K., (March 2013). *Supporting Middle School Teachers' Attention to Student Conjectures, Generalizations and Justifications: Research on School-based Professional Development*. Poster presented at WSU Academic Showcase, Pullman, WA.
- Mumme, J., Lesseig, K. (Sept. 2008). *What Might Leaders Do and What Should Participants Expect in Professional Development?* Session conducted at the annual meeting of the Colorado Council of Teachers of Mathematics, Denver, CO.
- Lesseig, K. (October 2004). *Algebra for All*. Session conducted at the annual meeting of the Colorado Council of Teachers of Mathematics, Denver, CO.
- Emmons, R., Lesseig, K. (1986). *An Integration Model for an Accelerated Math and Science-based Curriculum*. Presentation at the Missouri Conference of Gifted Education, Osage Beach, MO.

Invited Presentations

- Lesseig, K. (May 2015). *STEM Learning*. Presentation at the statewide Math Science Partnership (MSP) Meeting. Seattle, WA.
- Lesseig, K. (June 2012). *Capturing Student Conjectures, Generalization and Justification in Classroom Interactions*. Presentation at Geometry, Reasoning, and Instructional Practice (GRIP) 4th Conference on Representations of Practice, University of Michigan, Ann Arbor MI.
- Lesseig, K., Kelley-Petersen, M., Campbell, M. & Elliott, R. (February 2012). *The Role of Mathematical Justification in Professional Development: What is the Specialized Knowledge for Teachers?* Teachers Development Group Leadership Seminar of Mathematics Professional Development, Portland, OR.

* graduate student co-presenter

SCHOOL PARTNERSHIPS AND PROFESSIONAL DEVELOPMENT

- 2016-2017 **Mathematics Program Review: Evaluation coordinator**
Coordinated a comprehensive review of the mathematics program at a local middle school at the request of school administration. Duties included revising and implementing survey instruments, interview and observation protocols as well as analyzing data and writing the final report.
- 2014-2016 **Washington STEM PD: Consultant**
Supported Evergreen School District mathematics and science coaches in the planning and implementation of professional development for a group of secondary math and science teacher leaders. This work was part of a grant the district received from Washington STEM around personalized, video-based professional development.
- 2015-2016 **Mathematics Leader Workshops: Consultant**
Worked with Woodland Instructional Coach to plan and facilitate a series of Mathematics Workshops for administrators and teachers in three local districts. The workshops were designed to support instructional leaders in relation to the vision of NCTM's Principles to Action and Common Core State Standards.
- 2011-2012 **Teachers Development Group: Consultant**
Planned and facilitated Mathematics Studios within several secondary schools in the Seattle-Tacoma area as part of my consultant work with TDG.
- 2010-2011 **Mathematics Studio Fellowship Program: Supervising teacher**
Preservice teacher supervisor and participant in studio work at SkyView Middle School, Bend, OR. In conjunction with NSF Robert Noyce Teacher Scholarship Program (ESI 0934953) supporting the professional education of mathematics teachers along the continuum of preservice to inservice.
- 2008-2010 **Texas Instruments: Author**
Member of two project teams charged with writing and evaluating Algebra and Calculus lessons incorporating the latest TI-Nspire technology.
- 2003-2006 **San Luis Valley Math Academy: Lead Instructor, Curriculum Developer**
Mathematics and Science Partnership Grant coordinated through Adams State College to enhance algebra teaching and achievement of under-represented populations. Responsible for the design and instruction of summer professional development seminars for middle and high school teachers and students in high-needs, rural Colorado school districts.
- 2003-2004 **Alamosa Public Schools: Professional Development Facilitator**
Conducted four to six mathematics professional development seminars per year with district elementary teachers.
- 2000-2003 **Del Norte School District: Professional Development Facilitator**
Facilitated workshops for district teachers including "Math Strategies for Elementary Teachers" and "Raising Awareness of Equity through Mathematics."
- 1997-1999 **Equity in Mathematics Leadership Institute: Participant**

HONORS AND AWARDS

STaR Fellow: Selected for 2012 cohort in STaR, an NSF funded program designed to recognize and foster leadership in early career mathematics educators in areas of research, teaching and service.

2010 American Association of Colleges for Teacher Education (AACTE) award for excellent article writing for *Journal of Mathematics Teacher Education* publication (Elliott, Kazemi, Lesseig, Mumme, Carroll & Kelley-Petersen, 2009).

Colorado Council of Teachers of Mathematics Outstanding Teacher, 2002.

Boettcher Foundation Teacher Recognition Award, 2001.

Del Norte District Teacher of the Year, 2002, 1997.

SERVICE

International/National service:

Member of the Volunteer Committee for NCTM Regional Conference Seattle, WA, 2018
Proposal Reviewer for The German Israeli Foundation for Scientific Research and Development (2016)

Reviewer for eight peer-reviewed journals:

Journal of Mathematics Teacher Education (2012-2017)

Journal for Research in Mathematics Education (2012, 2013, 2017)

Mathematics Teacher Educator (2011-2015)

Mathematics Teacher Education and Development (2015-2017)

Mathematic Teaching in the Middle School (2015)

Middle School Journal (2016-2017)

School Science and Mathematics (2016-2017)

Teaching and Teacher Education (2016)

Reviewer for American Educational Research Association annual meeting RME SIG (2015)

Reviewer for Psychology of Mathematics Education (PME-NA) Conference (2012, 2016)

Reviewer for Association of Mathematics Teacher Educators Conference (2011, 2012, 2016)

Reviewer for National Council of Teachers of Mathematics Research Conference (2017)

Discussant for American Educational Research Association annual meeting (2012)

Institutional service:

Math Science Education PhD program committee (2011-2017)

Middle Level Mathematics program committee (2011-2017)

WSUV Mathematics Department committee (2012-2017)

WSU New Faculty Orientation - 2nd Year Panel, August, 2012

WSUV New Faculty Orientation Panel, August, 2015, 2016

BA program committee (2011-2017)

Secondary MiT program interview committee (2011, 2012, 2014)

WSUV Scholarship Committee (2012-2016)

Strategic planning committee College of Education, Vancouver campus (2011-2012)

Academic Director Search committee (2013-14)

Assistant Professor Math Education, Pullman, Search committee (2013-14)

Regional, State and Local service:

- Volunteer Committee member for NCTM Regional Conference in Seattle (2017-2018)
- Steering committee member for Washington STEM Framework for Action (2014)
- Co-Lead Mathematics Integration working group for NEXT Generation of STEM Teacher Preparation, an NSF-funded initiative to improve STEM teacher preparation in the state of Washington (2016-18)
- Founding member of Julia Set mathematics group, an informal setting for women from local K-12 schools, community colleges, and universities to discuss mathematics education issues while doing math together (2013-present)
- Presenter at STEM Night in local middle school (2016, 2017)

WASHINGTON STATE UNIVERSITY COURSES TAUGHT

- T&L 600 Math Problem Solving (Fall 2012)
- T&L 305 Fundamentals of Instruction (Fall 2011, 2012)
- T&L 352 Teaching Elementary Mathematics (Spring 2012-2017)
- T&L 426/523 Middle Level Mathematics Methods (Fall 2011)
- MATH 303 Higher Geometry (Fall 2012)
- T&L 427/534 Proportional Reasoning (Fall 2014, 2015, 2016)
- MATH 351 Algebraic Thinking for the Middle School Teacher (Spring, 2015)
- EdAd 510 Improvement of Instruction (Spring 2012)
- MATH 330 Teaching Secondary Mathematics (Fall 2012, 2014, 2016)
- MATH 432 Mathematics for Secondary and College Teachers (Fall 2013, Spring 2016)
- T&L 581 Learning and Development in Mathematics and Science (Fall 2013, 2015)
- T&L 571 Research in STEM Education (Spring 2017)
- T&L 585 Focused Reading and Conference in Math Science Education (Sum 2014, Spring 2017)
- T&L 591 Research Internship in Math Science Education (Sum 2014-2016)

PROFESSIONAL MEMBERSHIPS

- American Educational Research Association (AERA)
- Association of Mathematics Teacher Educators (AMTE)
- National Council of Teachers of Mathematics (NCTM)
- National Council of Supervisors of Mathematics (NCSM)
- Psychology of Mathematics Education, North America (PME-NA)
- Washington Teachers of Teachers of Mathematics (WATOTOM)