

JACQUELINE R. COOMES, PH. D.

Professor of Mathematics Education
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EDUCATION AND CERTIFICATION

Washington State University, Pullman, Washington.
Ph. D., Mathematics Education, 2006
Dissertation: Relationships between community, interactions, and ways of knowing in college precalculus classes.

Eastern Washington University, Cheney, Washington.
M.S., Mathematics, 1998.
Thesis: Elliptic functions and elliptic integrals.

Washington Teaching Certificates in Secondary Mathematics,
Initial certificate, 1995.
Continuing certificate, 2000.

University of California, Davis
B.S., Mathematics, 1993. Graduated Cum Laude

PROFESSIONAL POSITIONS

Special Assistant to the Provost for Honors, June 2019-20 Academic Year. Support changes in curriculum and vision to grow program distinction and effects.

Professor, Mathematics Education, tenure track appointment, at Eastern Washington University, Department of Mathematics, September 2014- present.
Graduate Faculty: 2006- present. See course list below.

President, Faculty Organization, Eastern Washington University, July 2016-June 2017. Chair of Academic Senate and Rules Committee; Co-Chair of Student Success and Retention Committee. Vice-President of Faculty Organization July 2015-June 2016.

Associate Professor of Mathematics Education, tenure track appointment, at Eastern Washington University, Department of Mathematics. January 2010- September 2014.

Assistant Professor of Mathematics Education, tenure track appointment, at Eastern Washington University, Department of Mathematics. January 2006-2010.
Courses Taught: Math 211: Structure of Elementary Mathematics I, Math 212: Structure of Elementary Mathematics II, Math 311: Functions and Relations, Math 370: Survey of Geometries, Math 390: Methods of Teaching Elementary School Mathematics, MTED 393: Methods of Teaching Secondary Mathematics I, Math 411: Development of the Number System, Math 413/513: Data Analysis and Probability for Middle Level Teachers, Math 416/516: Calculus for Middle Level Teachers, MTED 490: Senior Capstone: Mathematics Practicum, Math 492: Problem Solving Seminar, MTED 493: Methods of Teaching Secondary Mathematics II, Math 514: Algebra for Middle School Teachers, Math 521: Methods of Teaching Mathematics I, Math 522: Methods of

Teaching Mathematics II, Math 523: Methods of Teaching Mathematics III, Math 529: Topics in Mathematics Education, focus on proof and reasoning in Algebra; Math 592: Theory and Research in Mathematics Education, Math 601: Research Report, Math 694: Internship, MTED 695: Internship. Coordinate instructors teaching Math 114: Algebra Concepts, and develop curriculum for the course.

Mathematics Specialist, Academic Support Center and Department of Mathematics, September 1999 – December 2005: EWU. Hired, trained, and supervised tutors working with first-generation, low-income college students; taught math courses; served on department and university committees.

Courses taught: Math 115: Mathematical Reasoning, Math 161: Calculus I, Math 162: Calculus II, Math 199: Special Studies, Math 211: Structure of Elementary Mathematics I, Math 212: Structure of Elementary Mathematics II.

Mathematics and Computer Science Teacher, Assumption School, September 1998-June, 1999. Taught computer applications to K-8 students and adults, and mathematics to middle school students.

JOURNAL PUBLICATIONS and BOOK CHAPTERS

Lee, H.S., **Coomes, J.**, & Yim, J., (in revision with *Mathematics Teacher: Learning and Teaching PreK-12*) Exploring sums in a multiplication table. NCTM

Coomes, J., Kennedy, C., & Lee, H.S. (submitted March 2020 to *International Journal of Science and Mathematics Education*). Learning Progressions in a Task-based Professional Development Project: Effects on Instruction and Student Achievement in High School Algebra.

Lee, H. S., Yim, J., & **Coomes, J.**, (In publication) Developing Structural Reasoning with Diagrams. *Mathematics Teacher: Learning and Teaching PreK-12*. NCTM

Lee, H. S., **Coomes, J.**, & Yim, J. (2019). Teachers' conceptions of prior knowledge and the potential of a task in teaching practice. *Journal of Mathematics Teacher Education* 22(2) pp. 129-151.

Coomes, J. (2018). Illuminating Rectangle Border Challenges. *Mathematics Teacher*. Vol. 112, No 2 pp. 100-106.

Coomes, J., Alvin, B., & Olson, D. (2017). Cross sector collaboration to improve teaching and learning through focused inquiry. Chapter in (L. West & M. Boston) *Annual Perspectives in Mathematics Education 2017: Reflective and Collaborative Processes to Improve Mathematics Teaching*. NCTM: Reston, VA.

Coomes, J., & Lee, H.S. (2017). Empowering mathematical practices. *Mathematics Teaching in the Middle School: 2017 Focus issue on Formative Assessment*. Vol. 22, No 6 pp. 360-367.

Coomes, J. (2015). Reader reflections: Combine carefully. *Mathematics Teacher*. 109(2), 86.

Frost, J.H., & **Coomes, J.** (2014). Increasing proficiency levels of mathematical practices, Chapter in (K.S. Karp) *Annual Perspectives in Mathematics Education 2014: Using research to improve instruction*. NCTM: Reston, VA.

- Coomes, J.** (2013). Book Review of *Elliptic Tales: Curves, Counting, and Number Theory*, by Avner Ash and Robert Gross, *Mathematics Teacher*, Vol. 107, No. 3 (October 2013), pp. 238-239.
- Frost, J.H., **Coomes, J.**, & Lindeblad, K. (2012). Partnership paves the way to college success: High school and college math teachers collaborate to improve instruction. *Journal of Staff Development*, 33(5), 25-29.
- Frost, J.H., **Coomes, J.**, & Lindeblad, K. (2012). Partnership without hierarchy: Postsecondary outcomes from a cross-sector mathematics collaboration. *School-University Partnerships* 5(2), 38-50.
- Pyatt, K., & **Coomes, J.** (2012). Mathematically modeling aircraft fuel consumption. National Center for Case Study Teaching in Science (NCCSTS) <http://sciencecases.lib.buffalo.edu/cs/>.
- Coomes, J.**, Frost, J., & Lindeblad, K. (2012). Teachers learning through collaboration: Challenges and impacts of an inter-institutional project. Chapter in J. Bay-Williams and W. Speer (Eds.) *Professional Collaborations in Mathematics Teaching and Learning* (pp. 217-227). NCTM: Reston, VA.
- Coomes, J.**, (2010) Book Review of *How to Understand, Communicate, and Control Uncertainty Through Graphical Display*, by Howard Wainer. *Mathematics Teacher*, p.623.
- Gilbert, M. & **Coomes, J.** (2010). Developing Content Knowledge: What knowledge of mathematics do high school teachers use in teaching? *Mathematics Teacher* 103(6).
- Frost, J.H., **Coomes, J.**, Lindeblad, K. (2009). Collaborating to improve students' transitions from high school mathematics to college: Characteristics and outcomes of a cross-sector professional development project. *NASSP Bulletin*, 93(4).
- Coomes, J.** (2009). Taking and Creating Time: Leadership's Role in Preparing Future Mathematics Teachers. *Leadership Information* 8(3). School Information and Research Service.
- Coomes, J.** & McDuffie, A. (2009). Affecting Students' Ways of Knowing Mathematics. *MathAMATYC Educator* 1(1).
- Johnson, T. & **Coomes, J.** (2003). Significant Quality Mathematics Education Needed. *Journal of College Reading and Learning*, 33(2), 214-223.
- Nievergelt, Y. & **Coomes, J.** (1998). Elliptic integrals and elliptic functions in calculus and beyond. UMAP Modules: Tools for Teaching, p. 193-251, reprinted as Module 774, COMAP, Lexington, MA, 1999.

REFEREED CONFERENCE PROCEEDINGS

- Coomes, J. (Accepted, with invitation to expand). *Developing preservice teachers' ability to enact Formative assessment for mathematical practices*. Paper to be presented at the 14th International Congress on Mathematics Education, Shanghai, China, July 12-19, 2020.
- Coomes, J. (April, 2019). *Preparing STEM Teachers to Teach in High Need Schools: Developing a Road Map*. Paper presentation at the 2019 Annual meeting of the American

Educational Research Association, Toronto, Canada, April 5-9, 2019.

- Coomes, J. (January, 2019). *Improving Novice Math and Science Teachers' Use of Formative Assessment in High-need Classrooms: A Design Project*. Paper presentation at the 17th Annual Hawaii International Conference on Education, Waikiki, Hawaii, January 4-8, 2019.
- Agriss, S. W., Alvin, B., Reid, A., Coomes, J., Young, J.A., Olson, D., Many, A. (2017). *Successful transitions to college: A cross-sector English and mathematics collaboration*. A Panel Session at the 15th Annual Hawaii International Conference on Education, Waikiki, Hawaii, January 3-6, 2017.
- Lee, H. S., Coomes, J., & Yim, J. (2016). *Proceptual problem in the learning of function transformation*. Paper presented at the 2016 American Educational Research Association meeting, Washington D.C., April 8-12, 2016.
- Coomes, J. & Lee, H. S. (2016). *Coordinating symbolic and graphical meanings of function notation*. Paper presented at the 13th International Congress on Mathematics Education, Hamburg, Germany, July 24-31, 2016.
- Frost, J. & Coomes, J. (April, 2013). *Secondary mathematics teachers' ways of thinking: Illumination from a professional development activity*. Paper presented at the American Educational Research Association, Houston, TX, April 27-30, 2013.
- Frost, J., Coomes, J., & Lindeblad, K. (2012). *Partnership without hierarchy: Postsecondary outcomes from a collaborative partnership*. Paper presented at the American Educational Research Association Annual Meeting, Vancouver BC, April 14, 2012.
- Frost, J. & Coomes, J. (April 2010). *Meeting Teachers Where They Are: High Density, Low Pressure Mathematics Professional Development*. American Educational Research Association. Denver, Colorado, April 28- May 2, 2010.
- Coomes, J. & Pyatt, K. (Jan. 2010). *Preparing teacher candidates to teach through problem-based learning*. 8th Annual Hawaii International Conference on Education. Honolulu, HA.
- Gilbert, M., Coomes, J., & Lenges, A. (January 2008). *Characterizing mathematical knowledge for teaching*. 6th Annual Hawaii International Conference on Education. Honolulu, HA.
- Gilbert, M., Coomes, J., & Lenges, A. (March 2008). *The Mathematics that teachers use in teaching: Characterizing content knowledge for teaching*. American Educational Research Association, New York.
- Coomes, J. & McDuffie, A. (2007, October). *Fostering More Complex Ways of Knowing in Community College Precalculus Students*. Lamberg, T., & Wiest, L. R. (Eds.). *Proceedings of the 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Stateline (Lake Tahoe), NV: University of Nevada, Reno.*

PRESENTATIONS

- Coomes, J. and Bai, X. (March, 2020). *Design and Evaluation of Co-Requisites in College Mathematics*. WE-STEM Conference, Cheney, WA, March 6-7, 2020.

- Coomes, J. (April, 2019). *Preparing STEM Teachers to Teach in High Need Schools: Developing a Road Map*. Paper presentation at the 2019 Annual meeting of the American Educational Research Association, Toronto, Canada, April 5-9, 2019.
- Antilla, J., Baliram, N., Coomes, J., Lee, M., and others (PCK Working Group of NextGen). (April, 2019). *Pedagogical Content Knowledge Zoominar*.
https://serc.carleton.edu/nextgen_wa/components/workgroups/wg6.html
- Coomes, J. (January, 2019). *Improving Novice Math and Science Teachers' Use of Formative Assessment in High-need Classrooms: A Design Project*. Paper presentation at the 17th Annual Hawaii International Conference on Education, Waikiki, Hawaii, January 4-8, 2019.
- Coomes, J., (April, 2018). *Future Math Teachers Researching Their Practices*. Pacific Northwest Mathematics Association of America Conference, Seattle, WA.
- Coomes, J., Alvin, B. & Olson, D. (May, 2017). *Inspiring inquiries*. Washington State Community College Mathematics Conference, Grand Mound, WA, May 18-20, 2017.
- Coomes, J., Alvin, B. & Olson, D. (April, 2017). *Reflective and collaborative processes to improve mathematics teaching: APME 2017: Cross sector collaboration to improve teaching and learning through focused inquiry*. National Council of Teachers of Mathematics 2017 Annual Conference, San Antonio, TX, April 8-12, 2017.
- Coomes, J. (October, 2016). *Teaching for mathematical coherence*. The Northwest Mathematics Conference, Yakima, WA October 21-23, 2016.
- Alvin, B., Coomes, J., & Olson, D. (October, 2016). *Increasing capacity for professional growth through inquiry: Focusing on process*. The Northwest Mathematics Conference, Yakima, WA October 21-23, 2016.
- Agriss, S., Alvin, B., Coomes, J., Reid, A., Young, J., & Olson, D. (May, 2016). *Cross-Sector Communities of Practice: University, Community College, and High School English and Mathematics Collaborations*. Invited presentation for the Assessment, Teaching and Learning Conference. Vancouver, WA, May 4-6, 2016.
- Coomes, J., Alvin, B., Reid, A., Agriss, S., & Young, J. (2015). *Successful transitions: A cross-sector, cross-disciplinary partnership*. Pave the Way Conference: Advancing Equity, Access, Readiness, and Support. Tacoma, WA, October 5-6, 2015.
- Coomes, J. & Galey, E. (May, 2015). *Algebra 1: Teaching for meaning and coherence*. NSF 2015 Teaching & learning video showcase: Improving science, math, engineering, & computer science education. Online at <http://resourcecenters2015.videohall.com/> May 11-15, 2015.
- Alvin, B., Agriss, S., Coomes, J., Reid, A., Wildman, P., & Young, J. (April, 2015). *Successful transitions to college: Cross-sector collaboration, aimed at student success*. Assessment, Teaching, and Learning Conference, Spokane, WA, April 29-May 1, 2015.
- Coomes, J., Burton, M., Krupa, E., Salinas, A., Lee, J., Franz, D., & Eddy, C. (February, 2015). *Affiliates: becoming stronger advocates*. Association of Mathematics Teacher Educators, Orlando, FL, February 12-14, 2015.
- Coomes, J. & Kennedy, C. (September, 2014). *Riverpoint Advanced Mathematics Partnership –*

- Algebra: Improving coherence and depth of mathematics learning.* Poster presented at the US Department of Education Mathematics and Science Partnership Program Conference, Washington D.C., September 29-October 1, 2014.
- Frost, J.H. & Coomes, J. (Feb., 2014). *The development of mathematical practices: Using a quadratics task to prompt increased levels of proficiency.* Association of Mathematics Teacher Educators, San Diego, CA, February 6-8, 2014.
- Coomes, J. & Lee, H.S. (Feb., 2014). *Teachers' perceptions of students' prior knowledge for teaching new concepts.* Association of Mathematics Teacher Educators, San Diego, CA, February 6-8, 2014.
- Coomes, J. & Frost, J.H. (Oct., 2013). *Creating a vision for sustained effective professional development.* The Northwest Mathematics Conference, Bellevue, WA October 11-12, 2013.
- Lee, H.S. & Coomes, J. (Oct., 2013). *Examining the Standards for Mathematical Practice while using them.* The Northwest Mathematics Conference, Bellevue, WA October 11-12, 2013.
- Coomes, J. (September, 2013). *Riverpoint Advanced Mathematics Partnership – Algebra: Collaborating to improve learning in Algebra I.* Poster presented at the National Math and Science Partnership meeting in Washington D.C.
- Coomes, J., Alvin, B., Biggerstaff, R., Brady, J. Vredevelt, B., and Wolfrum, E. (April, 2013). *Strengthening college readiness and success through a regional partnership.* Assessment, Teaching, and Learning Conference, Spokane, WA.
- Frost, J., Slavitt, D., McDuffie, A., & Coomes, J. (February, 2012). *Supporting innovative secondary collaborations through school-university partnerships: Embedding inquiry into practice.* Association of Mathematics Teacher Educators, Fort Worth, Texas, February 9-11, 2012.
- Burton, M.E., Smith, S. Z., Coomes, J.R., Walker, C., Franz, D. P. (February, 2012). *Connecting and empowering AMTE Affiliates.* Annual meeting of the Association of Mathematics Teacher Educators. Orlando, Florida, January 24-26, 2013.
- Coomes, J. (June, 2011). *Using problems to challenge future teacher understandings.* Annual Meeting of the Pacific Northwest Section of the Mathematical Association of America. Juneau, Alaska.
- Alvin, B., Lane, J., Coomes, J., & Graham, M. (May, 2011). *Strategies for improving students' motivation and learning in developmental and first college mathematics courses.* Assessment, Teaching, and Learning Conference, Spokane, WA.
- Coomes, J., & Alvin, B. (October, 2010). *Variance: Do we really understand its importance in the study of probability and statistics?* Northwest Mathematics Conference, Spokane, WA.
- Coomes, J. & Pyatt, K. (July, 2010). *Using authentic problems in mathematics instruction.* National Supervisors of Curriculum Development Summer Conference, Seattle WA.

- Coomes, J., Marsh, A., Picicci, R. (July, 2010). *Student achievement in mathematics: The power of K-16 collaboration*. National Supervisors of Curriculum Development Summer Conference, Seattle WA.
- Coomes, J., & Alvin, B. (April, 2010). *Independent events: How do informal definitions and sample problems contribute to students' misconceptions?* Pacific Northwest chapter of the Mathematical Association of America, Seattle, WA.
- Frost, J.H., & Coomes, J. (April, 2010). *Meeting teachers where they are. Findings from a High Density, Low Pressure Mathematics Professional Development Project*. Annual meeting of the American Educational Research Association, Denver, CO.
- Coomes, J. & Pyatt, K. (January, 2010). *Experiencing problem based learning: Affecting preservice mathematics teacher beliefs*. Hawaii International Conference on Education, Honolulu, HA.
- Coomes, J., & Dowd, D. (Feb. 2009). *Developing a coherent and intentional teacher education program*. Association of Mathematics Teacher Educators, Orlando, Florida.
- Lenges, A., Coomes, J., & Gilbert, M. (Feb. 2009). *A hypothetical characterization of specialized content knowledge (SCK) and a tool for focusing professional development math tasks on SCK*. Association of Mathematics Teacher Educators, Orlando, Florida.
- Coomes, J. (January 2008) *Strengthening pedagogical content knowledge during mathematics student teaching*, OSPI January Conference, Spokane, WA.
- Alvin, B. & Coomes, J. (2007, October) *Independent events and conditional probability: Understanding and teaching*. Northwest Mathematics Conference. Seattle, WA
- Coomes, J. (2006, December) *College Readiness Standards: Lost in transition?* Transition Math Project, Seattle, WA.
- Coomes, J. & Lane, J. (2005, October) *Using assessment to improve student learning*. Northwest Mathematics Conference. Spokane, WA.
- Coomes, J. (2005, May) *Tutoring that improves learning*, Washington State Community College Mathematics Conference. Yakima, WA.
- Lane, J. & Coomes, J. (2004, August) *Learning and teaching linear functions: Video cases for mathematics profession development*. OSPI Summer Institutes. Seattle, WA.
- Coomes, J. & Lane, J. (2004, March) *Formative assessment in developmental mathematics: Improving teaching and learning*, National Association for Developmental Educators, 28th Annual Conference, St. Louis, Missouri.
- Coomes, J. & Redmon, A. (2003, May) *Encouraging students to move beyond memorization*. Washington State Community College Mathematics Conference. Wenatchee, WA.
- Coomes, J. (1998, April) *An introduction to elliptic integrals*. Washington State Community College Mathematics Conference. Chelan, WA. Funded by NSF grant 9455061, Chelan, WA.

PARTNERSHIPS

Launch Years Initiative: Streamlining the transition for students from high school to college math (2019-20). Member of the Design group and also on the Washington Steering Committee.

Funded by a Gates grant and led by the Dana Center at University of Texas, Austin, the project focuses on helping students in their transition from junior year of high school through their junior year in college: <https://www.utdanacenter.org/our-work/k-12-education/launch-years>

Washington State Mathematics Advisory Committee (2017-2019). Worked with others to develop a third year high school math course to replace Algebra 2 for students who are struggling in math: *Modeling Our World*.

Dare to Dream Academy (June, 2018). Worked with OSPI, EWU CAMP, and University of Washington CAMP to plan and teach a mathematics course to high school children of migrant workers to earn high school math credit.

Dare to Dream Academy (June, 2017). Collaborated with OSPI Mathematics Specialists, the OSPI Migrant Education Division, and EWU mathematics faculty to design and implement 30 hours of mathematics instruction for students in the Migrant Program through a grant administered by the EWU CAMP program and funded by the Association of Washington School Principals.

OSPI Higher Education and District Collaborations (2015- current). Work with Mathematics Education faculty, Education District Mathematics Specialists, and other District Mathematics Specialists throughout the state to implement mathematics-specific pedagogy. Developed Mathematically Productive Instructional Routines, and supported development of Professional Development on quadratics for all Washington high school mathematics teachers.

Mathematics Engineering Science Achievement (MESA) (2014-17). Worked with MESA Coordinator to provide tutors for Cheney Middle School and Westwood Middle School after school programs. Involved teaching an experimental class on tutoring, recruiting and supervising tutors.

Center for Strengthening the Teaching Profession (2009). Collaborated with teachers and CSTP personnel to develop the CSTP Teacher Leadership Skills Framework.

WORKSHOPS AND SHORT COURSES

Coomes, J. (June, 2017). EWU New Faculty Institute. *Designing a course syllabus*.

Young, J.A. & Coomes, J. (Winter and Spring, 2017) EWU New Faculty Workshop and Faculty Workshop developments in the Faculty Commons on *Transparent Assignments*. A sequence of two workshops that illustrate teaching strategies that support student success.

Coomes, J. (2012). Cheney School District Summer workshop. Designed and facilitated a workshop to help K-2 teachers understand and be able to teach the Operations and Algebraic Thinking domain of the Common Core State Standards. Created a packet of materials for teachers to use throughout the year.

Coomes, J., & Frost, J. (August 26, 2014). Developed and delivered a full day workshop for Mead School District high school teachers to help them better understand the CCSS and use technology effectively in mathematics lessons.

GRANTS FUNDED

College Spark of Washington (August, 2018 - 2021) PI. \$150,000 for *Corequisites in math: Increasing success and reducing time to degree*. The goal of this project is to design and implement corequisite courses for college-level mathematics courses that will allow

students who place into developmental mathematics courses to take a first college-level course earlier in their college careers. Project personnel will engage in a cycle of design, implementation, and assessment of corequisite courses to build capacity at EWU by increasing the number of students for whom corequisite courses lead to successful completion of the math they need to meet their goals. Our goal is to eliminate one developmental course for all students on two pathways while improving pass rates in the college level courses.

Eastern Washington University Robert Noyce Scholarship Program (September, 2017-2021) PI. \$1.45 million for scholarships, activities, and induction of well prepared and diverse STEM teachers.

Washington Student Achievement Council/OSPI (July, 2012- September, 2015) Project Leader and PI: Riverpoint Advanced Mathematics Partnership –Algebra \$849,736. Provided professional development to middle and high school Algebra 1 teachers and their administrators in the Spokane area. Dissemination site: <https://sites.ewu.edu/jcoomes/>

EWU Professional Leave (Winter, 2014). Examining teachers' understanding of the Common Core State Standards.

Co-Principal Investigator on Riverpoint Advanced Mathematics Partnership (RAMP) A 3-year Higher Education Coordinating Board (HECB) grant to provide professional development to mathematics teachers in ESD 101 preparing high school students for college-level mathematics. \$1,180,246. (July, 2009 - 2012).

HECB State work study grant: Mathematics Tutoring Collaborative. Washington State Work Study Math & Science Teacher Program. Included science tutoring component. (June, 2010) \$38,030.00

HECB State work study grant: Mathematics Tutoring Collaborative. Washington State Work Study Math & Science Teacher Program. Included science tutoring component. (June, 2009) \$38,030.00

HECB Service Learning Grant: Mathematics Tutoring Collaborative. (June, 2008) \$35,694.88

Faculty research grant to investigate personal epistemologies of preservice elementary math majors. (June, 2007) \$5,000

HECB Service Learning Grant: Mathematics Tutoring Collaborative. Funds provide work study wages for EWU students to tutor in K-12 mathematics classes. (June, 2007) \$34,998.44

EWU Student Tech Fee Grant to replace computers in the Mathematics Lab. (Spring, 2005)

Eastern Washington University Student Technology Fee Committee Grant to provide new computers and software for the Mathematics Lab. (Spring 2001)

ADDITIONAL GRANT WORK:

Community Colleges of Spokane Improving Math College Placement Practice (2018-2021). Working with the Community Colleges of Spokane in their College Spark Grant to develop a math placement instrument and process for both SFCC and SCC to optimally place students in math classes based on high school performance.

NextGen (Fall, 2016 – present). Participate in cross-institutional work groups to create, adapt, present, or pilot resources, models, and tools related to critical areas for STEM teacher preparation. The goals of the project are to improve the majority of STEM teacher preparation programs in the State of Washington, increase the recruitment of qualified and diverse STEM students into teaching, and create an adaptive, research-based model for improving STEM teacher preparation through collaboration.

Successful Transitions to College (August, 2014- August 2017). Math lead on a College Spark grant that provides professional development by supporting cohorts of teachers/faculty from high schools, community colleges, and EWU in working together to improve students' transition from high school to mathematics.

Bridge to College Mathematics Course (2014-2017): Worked with others to design and implement professional development for Bridge Course Trainers, Bridge Team Leaders, and teachers who will be teaching this course. Funded through a College Spark grant.

State Network of Educators (2013-2014): Designed and submitted formative assessment tools for the Smarter Balanced Assessment Digital Library. Provided feedback and evaluation on others' submissions.

Core to College (June, 2012 – August, 2014). Collaboration between sectors to improve transitions for students in mathematics. We developed a Gap Analysis tool to foster understandings of how our programs align with the Common Core State Standards, and to use this tool to foster communication and alignment between sectors.

Affinity Network (May, 2012- June 2013). Collaboration between K-12, Community Colleges, and universities to understand the Common Core State Standards and consider ways to use it to develop smoother transitions for students in mathematics.

Mathematics Content Collaboration Communities (2006-2010). Developed rich math tasks for use in professional development with middle and high school mathematics teachers. Facilitated workshops using the rich tasks; researched teachers' mathematical knowledge for teaching.

Partners in Learning (2007-2010). Worked with high school mathematics teachers to improve K-12 student learning and to improve the preparation of preservice mathematics teachers.

Transition Mathematics Project (2005-2009). Worked on two different teams, one in Seattle and one in Spokane, to discuss and share ideas to help students better transition from high school to college mathematics.

TRiO Grant (1999-2005). Provided mathematics support for first generation and low-income students, and students with disabilities. Collaborated with others to assess the TRiO program using CAS Standards. Trained student tutors leading to certification through the College Reading and Learning Association. Managed supplemental instruction groups. Designed interventions for students to support their growth in learning mathematics and in learning how to learn. Aided in the writing for additional grant funding.

Higher Education Coordinating Board Title II Professional Development Grant: Northeast Consortium of Rural Schools Math Project (2003-04). Collaborated with PI Dowd to provide professional development for mathematics teachers in 11 Rural school districts north of Spokane.

PROFESSIONAL INTERESTS

Design research; Mathematics teacher education; Mathematical knowledge for teaching; Pedagogical content knowledge; Professional development; Undergraduate mathematics (teaching and learning); Problem solving; Students' personal epistemologies

HONORS AND AWARDS

EWU Trustees' Medal, 2019

College of Science, Health, and Engineering 2011 Chairs' Excellence Award for Outstanding Excellence in Scholarship, EWU

Chairs' Award for Service, College of Science, Health, and Engineering, EWU, 2006.

Chairs' Award for Service, College of Science, Mathematics, and Technology, EWU, 2001.

Citation for Excellence in Undergraduate Mathematics, Mathematics Department, U. C., Davis, 1993.

PROFESSIONAL AFFILIATIONS

Mathematical Association of America

National Council of Teachers of Mathematics

Association of Mathematics Teacher Educators

American Educational Research Association

Washington State Math Council

Pi Mu Epsilon

Golden Key National Honor Society

Phi Kappa Phi: President of EWU's Chapter 2019-20