

Nicole Marie Garcia
Curriculum Vitae

University of Michigan
School of Education
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EDUCATION

- M.A. University of Michigan Ann Arbor (2004)**
Educational Studies in Mathematics
Rackham-Education Master's Award, 2002—2004
- B.S.Ed. University of Michigan Ann Arbor (2001)**
Mathematics and Chemistry
Scholar Recognition Award, 1997-2001

PROFESSIONAL EXPERIENCE

1/2019 – present Associate Director
TeachingWorks, University of Michigan School of Education

Develop and carry out strategic planning for k-12 partnership work, including securing funding for research and design projects. Lead planning, design, and implementation of all areas of k-12 professional support including in-service professional development and coaching, mentor teacher and supervisor development and coaching, district administrator support and coaching, and the development of district hiring tools.

10/2016 – 1/2018 Chief Program Officer
TeachingWorks, University of Michigan School of Education

Oversee programming in the k-12 and teacher education strands of professional development. Lead mathematics team work related to planning, designing and using professional materials for teacher education focused on high leverage practices and high leverage mathematics content.

9/2012 – 10/2016 Lead Mathematics Research and Design Specialist
TeachingWorks, University of Michigan School of Education

Lead mathematics team work related to planning, designing and using professional materials for teacher education focused on high leverage practices and high leverage mathematics content. Direct the Elementary Mathematics Laboratory taught by Dr. Ball. Work with the University of Michigan School of Education Mathematics Methods Planning Group to collaboratively plan elementary methods courses and administer elementary mathematics assessments.

8/2009 – 5/2010 Algebra Project Teacher and Professional Development Support
Ypsilanti High School, Ypsilanti, MI

Taught one cohort of the first-year Algebra Project course and participated in a collaborative planning team with research project members.

7/2007 – 8/2012 Mathematics Coordinator and Director
Livingston and Washtenaw Mathematics and Science Center, Washtenaw Intermediate School District

Plan, design and implement professional development and professional development materials for k-12

mathematics and science teachers in Livingston and Washtenaw counties and state-wide; plan, design and implement trainings for professional developers; assist curriculum directors in alignment and assessment work; participate in state-wide network of Mathematics and Science center directors and the MI STEM Partnership network; support high priority schools through coaching, curriculum development and professional development; and manage math and science grants.

8/2001—6/2007 Mathematics Instructor & BASE Advisor
Washtenaw Technical Middle College, Ann Arbor, Michigan

Taught pre-Algebra, Algebra I/II, and pre-Calculus; advised and supported a group of 40 students in their program and class choices at Washtenaw Community College from program entry until graduation; designed and aligned curriculum for pre-Algebra and Algebra I/II courses; maintained positive relationship with WCC mathematics department; analyzed student success in subsequent mathematics courses; developed student intake assessment and placed all incoming students into appropriate courses; mentored new mathematics teachers and interviewed and recommended new mathematics teachers; and served as Student Council Advisor including managing dances, fund raising, community service opportunities, Habitat for Humanity, and yearbook production.

9/2000—4/2001 Student Teacher & Pre-Student Teacher
Pioneer High School, Ann Arbor, Michigan

Prepared, taught, and evaluated lessons in Algebra I and Geometry courses, participated in research project with University of Michigan professor Patricio Herbst, and designed unit on area, surface area, and volume.

RESEARCH PROJECTS

Assessing Content Knowledge for Teaching in Secondary Mathematics 2016 – 2017

Co-principal investigator of a Carnegie Corporation of New York funded research and development project. Co-lead a team in development, piloting, and validation of measures of specialized content knowledge for the teaching of secondary mathematics.

Organizing to Learn Practice (O2LP) Project 2016 – present

Principal investigator of an NSF-funded project studying teacher learning through participating in classroom-focused professional development. Direct a project team consisting of a project manager, post doctoral research fellows, and graduate student researchers.

Teacher Preparation Transformation Centers Initiative 2016 - 2018

Collaboratively developed and lead professional development series for teacher educators from university-based teacher preparation programs, residency-based teacher preparation programs, and alternative route preparation programs focused on improving teacher educator's teaching practice.

Elementary Mathematics Laboratory (EML) 2013 – present

Designer and researcher of professional development centered around the observation of teaching in upper elementary mathematics. The Elementary Mathematics Laboratory is a project that brings together the study and development of practice with the teaching and learning of students and professionals.

National Observation of Teaching Exam (NOTE) Research and Development 2014 – 2018

Collaborated with Educational Testing Services to develop and validate measures of elementary mathematics teacher candidate's specialized and common content knowledge for teaching, and interactive teaching practices. Develop included work in innovative spaces such as the University of Central Florida's Teach Live environment.

Building Practical Infrastructure for Learning to Teach the Common Core

2012 – 2015

Lead the development, piloting, and scoring of elementary and secondary measures of teacher modeling and discussion-leading practice. Lead the development of exemplar videos of mathematics teaching practice and the design of the online platform housing the videos. Developed sample curriculum materials for mathematics teacher educators.

UNIVERSITY TEACHING EXPERIENCE

EDUC 402, Using Literacy to Teach and Learn Mathematics in Secondary Schools Fall, 2018
School of Education, University of Michigan

GRANTS

Awarded

Assessing Content Knowledge for Teaching: Secondary Level English Language Arts and Mathematics. Carnegie Corporation of New York, \$500,000; 2016–2017. (Co-principal investigator with Deborah Ball and Francesca Forzani.)

Organizing to Learn Practice: Teacher Learning in Classroom-Focused Professional Development. National Science Foundation, \$2,699,837; 2016–2020. (Co-principal investigator with Meghan Shaughnessy and Deborah Ball.)

PUBLICATIONS

* Indicates graduate student or postdoctoral research co-author

Articles

Selling, S. K., **Garcia, N.**, & Ball, D. L. (2016). What Does it Take to Develop Assessments of Mathematical Knowledge for Teaching?: Unpacking the Mathematical Work of Teaching. *The Mathematics Enthusiast*, 13(1), 35-51.

Book chapters

Garcia, N., & Shaughnessy, M. (2017). Organizing to learn practice: Classroom-focused professional development. In L. West & M. Boston (Eds.), *Annual perspectives in mathematics education* (pp. 135–144). Reston, VA: National Council of Teachers of Mathematics.

Shaughnessy, M., Ball, D. L., & **Garcia, N.** (2017). A laboratory approach to the professional development of elementary mathematics specialists. *Elementary Mathematics Specialists: Developing, Refining, and Examining Programs That Support Mathematics Teaching and Learning*. Association of Mathematics Teacher Educators.

Garcia, N., & Herbst, P.G. (2006). Teaching mathematics with Problems: What One Teacher Learned Through Research. *Teachers Engaged in Research: Inquiry into Mathematics Classrooms Grades 9-12*. Reston, VA: National Council of Teachers of Mathematics.

Proceedings

Garcia, N., Shaughnessy, M., *Prawat, X. J., *Pfaff, E., *Mortimer, J., Cirino, N., Blunk, M., & *Robinson, D. (2018, November). *Changing Teaching Practice: Examining Professional Development Impact on Mathematics Discussion Leading Practice*. In T. E. Hodges, G. J. Roy, & A. M. Tyminski (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 366–369). Greenville, SC: University of South Carolina & Clemson University.

Shaughnessy, M., **Garcia, N. M.**, Selling, S. K., & Ball, D. L. (2016). *What knowledge and skill do mathematics teacher educators need and (how) can we support its development?* Proceedings of the Thirty-eighth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Tucson, AZ: University of Arizona.

Garcia, N., Selling, S.K., & *Wilkes, C. (2015). Standardized assessments of discussion leading practice: Are they valid measures? *Proceedings of the Thirty-seventh Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University

Selling, S.K., Shaughnessy, M., *Willis, A.T., **Garcia, N.**, *O'Neill, M.K., & Ball, D.L. (2015). Standardized assessments of beginning teachers' discussion leading practice: Is it possible and what can we learn? *Proceedings of the Thirty-seventh Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University

INVITED PRESENTATIONS

Shaughnessy, M., & **Garcia, N.** (2016, February). *Leading mathematics discussions: An observational tool for providing feedback*. Presentation at Critical Issues in Mathematics Education, Mathematical Sciences Research Institute, Berkeley, CA.

Garcia, N., & Shaughnessy, M. (2015, October). *High-leverage Teaching Practices: What, why and how*. Invited presentation at the Ohio Confederation of Teacher Education Organizations annual conference, Dublin, OH.

Garcia, N. (2015, April). *Preparing new teachers for practice: What are high-leverage practices of teaching and what good can they do?* Presentation at the Minnesota Association of Colleges for Teacher Education Spring Meeting, Plymouth, MN.

Garcia, N. (2015, March). *What are high-leverage practices of teaching and what good can they do?* Presentation at the National Board for Professional Teaching Standards Teaching and Learning Conference, Washington, D.C.

Garcia, N. (2012, September). *Mathematics learning trajectories and progressions in the CCSS-M*. Washtenaw County Common Core Summit, Ann Arbor, MI.

Garcia, N. (2012, September). *Michigan and the Next Generation Science Standards*. Washtenaw County Common Core Summit, Ann Arbor, MI.

Hodges, R. & **Garcia, N.** (2006, September). *MDE HS Course Content Expectations Rollout*. Washtenaw Intermediate School District, Ann Arbor, MI.

CONFERENCE PRESENTATIONS

Garcia, N., Shaughnessy, M., & Pynes, D. (2019, April). *Components of professional development that lead to change in teaching practice*. Session presented at the National Council of Teachers of Mathematics Research Conference. San Diego, CA.

Garcia, N. (2019, March). *Using high-leverage practices to build university-district coherence*. Session presented at Michigan Association of Mathematics Teacher Educators Conversations Among Colleagues. Holland, MI.

Shaughnessy, M., **Garcia, N.**, & Pynes, D. (2018, October). *Learning from others' teaching: Supporting students in learning to critique mathematical arguments*. Session presented at the National Council of Teachers of Mathematics Regional Conference and Exposition. Hartford, CT.

Garcia, N., Shaughnessy, M., Prawat, X. J., Pfaff, E., Mortimer, J., Cirino, N., Blunk, M., & Robinson, D. (2018, November). *Changing Teaching Practice: Examining Professional Development Impact on Mathematics Discussion Leading Practice*. Paper presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.

Garcia, N., & Reinhardt, K. (2018, April). *Orienting students to the thinking of others: What do beginning teachers do and how can we support all teachers' practice?* Session presented at the National Council of Supervisors of Mathematics Annual Meeting. Washington, D.C.

Shaughnessy, M., & **Garcia, N.** (2018, April). *Using video to support the improvement of teaching practice.* Session presented at the National Council of Supervisors of Mathematics Annual Meeting. Washington, D.C.

Garcia, N., & Shaughnessy, M. (2017, April). Mathematical practices: Making complex mathematics accessible to every student. Session presented at the National Council of Teachers of Mathematics Annual Conference. San Antonio, TX.

Garcia, N., Shaughnessy, M., & Ball, D.L. (2017, April). *Public Teaching: Strategies for Coaches to Support the "Seeing" of Teaching.* Session presented at the National Council of Supervisors of Mathematics Annual Meeting. San Antonio, TX.

Ball, D. L., Shaughnessy, M., & **Garcia, N.** (2017, February). *Reconsidering video as a tool to support teacher learning.* Session presented at the Annual Conference of the Association of Mathematics Teacher Educators. Orlando, FL.

O'Neill, M. K., Shaughnessy, M., **Garcia, N.**, & Selling, S. K. (2016, April). *Concluding Mathematics Discussions: What do novice teachers do and how can we support teachers' practice?* Presentation at the National Council of Supervisors of Mathematics Annual Meeting, Oakland, CA.

Shaughnessy, M., **Garcia, N.**, Selling, S. K., O'Neill, M. K., Salazar, S. B., Wilkes, C., Willis, A., & Ball, D. L. (2016, April). *Making Content Explicit: The practice and beginners' skills.* Session presented at the National Council of Teachers of Mathematics 2016 Research Conference, San Francisco, CA.

Ball, D. L., Shaughnessy, M., **Garcia, N.**, & Selling, S.K. (2016, April). *(How) can video be used to support teacher learning?* Session presented at the National Council of Supervisors of Mathematics Annual Meeting, Oakland, CA.

Shaughnessy, M., **Garcia, N.**, Selling, S. K., O'Neill, M. K., Salazar, S. B., Wilkes, C., Willis, A., & Ball, D. L. (2016, April). Assessing novices' skills in leading mathematics discussions. In D. L. Ball (Chair), *Beginning Mathematics Teaching*. Symposium conducted at the annual meeting of the American Educational Research Association, Washington, D.C.

Egan, T., & **Garcia, N.** (2016, February). *The challenge and potential of assessing high-leverage practices for beginning teaching.* Presentation at the American Association of Colleges for Teacher Education Annual Meeting, Las Vegas, NV.

Garcia, N., Selling, S.K., & Shaughnessy, M. (2016, February). *Investigating how beginning mathematics teachers make content explicit.* Presentation at the American Association of Colleges for Teacher Education Annual Meeting, Las Vegas, NV.

Shaughnessy, M., Selling, S.K., & **Garcia, N.** (2016, February). *What knowledge and skill do teacher educators need and (how) can we support its development.* Presentation at the American Association of Colleges for Teacher Education Annual Meeting, Las Vegas, NV.

Shaughnessy, M., **Garcia, N.**, McNamara, J., & Willis, A.T. (2016, January). *Professional learning for leading mathematics discussions.* Presentation at the Twentieth Annual Conference of the Association of Mathematics Teacher Educators, Irvine, CA.

Garcia, N., Selling, S.K., & Wilkes, C. (2015, November). *Standardized assessments of discussion leading practice: Are they valid measures?* Paper presented at the Thirty-seventh Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East

Lansing, MI: Michigan State University

Selling, S.K., Shaughnessy, M., Willis, A.T., **Garcia, N.**, O'Neill, M.K., & Ball, D.L. (2015, November). *Standardized assessments of beginning teachers' discussion leading practice: Is it possible and what can we learn?* Paper presented at the Thirty-seventh Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, MI: Michigan State University

Garcia, N. (2015, April). *Developing teaching that supports engagement in the mathematical practices.* Presentation at the Annual National Council of Supervisors of Mathematics Conference, Boston, MA.

Shaughnessy, M., Ball, D.L., Mann, L., & **Garcia, N.** (2015, April). *(How) can explicitness about mathematical practices support equitable instruction?* Presentation at the Annual National Council of Supervisors of Mathematics Conference, Boston, MA.

Garcia, N., & Selling, S.K. (2015, February). *Assessing k-12 mathematics teachers' discussion-leading practice: What can we learn through standardization?* Presentation at the American Association of Colleges for Teacher Education Annual Meeting, Atlanta, GA.

Ball, D.L., Bass, H., **Garcia, N.**, McNamara, J.C., O'Neill, M.K., & Shaughnessy, M. (2014, April). *Using practice as a site for professional learning and teaching.* Presentation at the National Council of Teachers of Mathematics Research Conference, New Orleans, LA.

Ball, D.L., **Garcia, N.**, & McNamara, J.C. (2014, April). *Examining and developing practice through live laboratory teaching.* Presentation at the Annual National Council of Supervisors of Mathematics Conference, New Orleans, LA.

Garcia, N., O'Neill, M.K., & Shaughnessy, M. (2014, April). *Productive mathematics tasks in a Common Core classroom.* Presentation at the National Council of Teachers of Mathematics Annual Conference, New Orleans, LA.

Garcia, N. (2014, April). *Examining and developing practice through live laboratory teaching.* Presentation at the National Council of Teachers of Mathematics Annual Conference, New Orleans, LA.

Ball, D.L., **Garcia, N.**, & Shaughnessy, M. (2014, March). *Becoming Explicit: Articulating Practice in the Elementary Mathematics Laboratory.* Presentation at the American Association of Colleges for Teacher Education 2014 Annual Meeting, Indianapolis, IN.

Garcia, N., & Ridenour, T. (2014, March). *Representations of practice: Video collections and their use in teacher education.* Presentation at the American Association of Colleges of Teacher Education 2014 Annual Meeting, Indianapolis, IN.

Garcia, N., & Schutz, K. (2013, February). *Making Content Explicit: Approaches for supporting elementary teachers of literacy and mathematics.* Presentation at the American Association of Colleges for Teacher Education 2013 Annual Meeting, Orlando, FL.

Dugger, D., & **Garcia, N.** (2006, June). *Rethinking the 3 R's: Relationships then Rigor and Relevance.* International Center for Leadership in Education and Successful Practices Network Model Schools Conference, Orlando, FL.

Garcia, N. (2006, May). *Building Mathematics Courses Around Student Skills and Expected Outcomes.* Presentation at the Michigan Department of Education Promising Redesign Practices Conference, Dearborn, MI.

Garcia, N., & Goldenberg, M. (2003, April). *Tensions in Implementation of a Modeling-Based Curriculum.* Presentation at the National Council of Teachers of Mathematics Annual Conference, San Antonio, TX.

SELECTED PROFESSIONAL DEVELOPMENT PRESENTATIONS AND PROJECTS

Algebra Institute, 2008

Collaboratively designed and delivered a 5-day institute for Algebra teachers focused on building a deep conceptual understanding of a functions-based approach.

Algebra Project at Ypsilanti High School

2009 – 2010

Supported the launch of Ypsilanti High School's Algebra Project by providing teacher professional support and collaboratively planning lessons, served on the national curriculum team, and worked with the parent involvement group.

Examining High-Leverage Teaching Practices

2014 - 2015

Collaboratively planned, designed and implemented a week-long professional development session for teachers and teacher leaders focused on recognizing and implementing high-leverage teaching practices such as eliciting and interpreting student thinking, leading a whole class discussion, and setting and implementing norms and routines for discourse.

Marion County Public Schools Local Mathematics Laboratory

2015 – 2016

Co-led a series of professional development sessions for elementary and middle school mathematics coaches focused on "making teaching public." Coaches learned to teach model lessons in ways that made the work of teaching visible for observing teachers and to facilitate pre-briefing and debriefing conversations of such teaching.

Michigan Mathematics and Science Teacher Leadership Collaborative

2007 - 2009

Supported a team of teachers from a high priority district in this MSP grant funded project aimed at developing teacher leaders in struggling districts, managed all grant paperwork, and supported clear communication within the district.

Michigan Program Network

2015 – present

Provided professional development and group facilitation to a network of teacher educators from programs across the state of Michigan. Supported network partners in designing teacher education activities, provided one-on-one coaching, and supported broad implementation of practice-based assessments.

Michigan Program Network Site-based Teacher Educator Program

2016 – 18

Designed and delivered mentor teacher professional development focused on pedagogies to support beginning teachers as part of a larger project team.

Montgomery County Public Schools Mathematics Partnership

2017-18

Collaboratively planned, designed, and implemented a professional development series for elementary mathematics teachers in Montgomery County, Maryland focused on improving mathematics content knowledge and teaching practice with specific attention to equitable teaching practice.

Science and Mathematics Misconceptions Management (SaM3)

2010 - 2014

Led a team in the design and submission of this Section 99.6 state grant aimed at building teacher capacity to address student misconceptions, led the professional development team in the design and creation of materials, led the mathematics facilitation team, and led the design of the facilitator training.

Strategic Questioning Techniques

2013

Planned, designed and implemented a week-long professional development session aimed at 1) engaging teachers in asking strategic questions to support mathematics learning through problem solving while 2) simultaneously working with teacher educators on pedagogies for teaching others to do this work.

Studying Mathematics Learning from the Student Perspective

2008 - 2012

Planned, designed and implemented this dual-county mathematics initiative for k-12 teachers. Planned, designed and implemented facilitator training sessions. A full report and additional information on this project are available at <http://www.studyingmathlearning.weebly.com>

Teacher Preparation Transformation Centers Initiative

2016 – 2018

Collaboratively designed, developed, and delivered professional development to teacher educators across the country focused on developing skill with teaching high-leverage practices to beginning teachers utilizing practice-based pedagogies.

LICENSES, CERTIFICATIONS AND TRAININGS

Adaptive Schools Training	2007
Algebra Project Teacher and Professional Developer Training	2009
Algebra Project Teacher Curriculum Team Member	2009—2010
Critical Friend's Group Training	2007
Grades 7-12 Mathematics and Chemistry Professional Certification	2001—present