

# CURRICULUM VITAE

Daniel I. Chazan

## 1. Personal Information

Daniel Chazan

Professor

Center for Mathematics Education, Department of Teaching and Learning, Policy and Leadership  
College of Education, 2226C Benjamin Building, University of Maryland

College Park, MD 20742-1175

Telephone: (301) 405-8539

Email: dchazan[at]umd.edu

### Academic Background

Ed.D. Harvard Graduate School of Education, Cambridge, MA, 1989

Ed.M Harvard Graduate School of Education, Cambridge, MA, 1982

A.B. Near Eastern and Judaic Studies, Brandeis University, Waltham, MA, 1981 (*summa cum laude*),

Massachusetts Teaching Certification, High School Mathematics, #0281646.

### Professional Work Experience-

2012-present Professor, Department of Teaching and Learning, Policy and Leadership.  
Director, Center for Mathematics Education, University of Maryland, College  
Park, MD. Co-Director, Terrapin Teachers.

2002-2012 Associate Professor, Department of Curriculum and Instruction. University of  
Maryland, College Park, MD.

1996-2002 Associate Professor, Department of Teacher Education, Michigan State  
University, East Lansing, MI.

1990-1996 Assistant Professor, Department of Teacher Education, Michigan State  
University, East Lansing, MI.

1989-1990 Senior Research Associate, Education Development Center, Newton, MA.

1989 Mathematics Teacher, Lincoln-Sudbury High School, Sudbury, MA.

1988 Lecturer, Harvard Graduate School of Education, Cambridge, MA.

1986-1988 Project Leader, Educational Technology Center, Cambridge, MA.

1985-1989 Consultant, Education Development Center, Newton, MA.

1983-1986 Mathematics Coordinator, Cohen Hillel Academy, Swampscott, MA.

1982-1985 Teacher, Cohen Hillel Academy, Swampscott, MA.

## 2. Research, Scholarly, and Creative Activities<sup>1</sup>

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<sup>1</sup> Lead or corresponding author on jointly authored works is identified by the bold font; no bolding suggests equal responsibility. An asterisk (\*) designates authors who were also graduate students, post-doctoral fellows, or Faculty Research Associates, (T) indicates practicing teacher.

a. Books.

i. Books authored.

**Chazan, D.**, Callis, S. (T), and (T) Lehman, M. (2007). *Embracing reason: Egalitarian ideals and high school mathematics teaching*. New York: Taylor Francis.

**Chazan, D.** (2000). *Beyond formulas in mathematics and teaching: Dynamics of the high school algebra classroom*. New York: Teachers College Press.

**Chazan, D.** and (T) Houde, R. (1989). *How to use conjecturing and microcomputers to teach high school geometry*. Reston, VA: National Council of Teachers of Mathematics.

ii. Books and Special Issues edited.

**Herbst, P.**, & Chazan, D. (Eds.). (2011). *ZDM—The International Journal of Mathematics Education*, 43(1), (Special issue: Creating and Using Representations of Mathematics Teaching in Research and Teacher Development).

**Herbst, P.**, & Chazan, D. (Eds.). (2009). *Recherches en Didactique des Mathématiques*, 29(1), (Special issue: Methodologies for the Study of Instruction in Mathematics Classrooms).

Blaskopf, W. (T), & Chazan, D. (Eds.). (2001). *Mathematics Teacher*, 94(8), (Special issue: Connections, Issue editor).

**Lehrer R.**, & Chazan, D. (Eds.). (1998). *Designing learning environments to develop understanding of geometry and space*. Hillsdale: Erlbaum.

Chazan, D., & Lacey, C. (Eds.). (1989). *Harvard Educational Review*, 59(1).

Broderick, M., Chazan, D., Lawrence, S., Naso, P., and Starnes, B. (Eds.) (1988). *For teachers about teaching*, (Reprint Series No. 20). Cambridge: Harvard Educational Review.

iii. Chapters in books († designates refereed, + designates invited)

Chazan, D., Herbst, P. & Clark, L. (2014) Reviewing Recent Research on Mathematics Teaching: Engaging, and Being Influenced by, Research on Learning. In D. Gitomer & C. Bell (Eds.), *Handbook of Research on Teaching* (Fifth Edition). Washington, DC: American Educational Research Association.

Chazan, D. and Yerushalmy, M. (2014). The Future of Textbooks: Ramifications of Technological Change for Curricular Research in Mathematics Education. In M. Stochetti (ed.), *Media and Education in the Digital Age: A Critical Introduction*. NY: Peter Lang.

Chazan, D. (2013). Substantive Structures of Mathematics, Processes on Objects, Instructional Situations, and Curricular Approaches: An Exploration on a School Algebra Theme. In P. Andrew & T. Rowland (Eds.), *MasterClass in Mathematics Education*, (pp. 125-135). London: Bloomsbury Academic.

† **Chazan, D.**, Herbst, P., & Sela, H.\* (2011). Instructional alternatives via a virtual setting: Rich media supports for teacher development. In O. Zaslavsky & P. Sullivan (Eds.), *Constructing knowledge for teaching secondary mathematics: Tasks to enhance prospective and practicing teacher learning* (pp. 23-37). New York: Springer.

- † Marcus, R.\*, & Chazan, D. (2010). Teachers' knowledge of mathematics in action: Helping students think about solving equations in the one-variable-first algebra curriculum. In R. Leikin & R. Zaskis (Eds.), *Learning through Teaching: Developing mathematics teachers' knowledge and expertise in practice* (pp. 169-187). New York: Springer.
- † **Clark, L.**, Johnson, W.\*, & Chazan, D., (2009) Researching African American mathematics teachers of African American students: Conceptual and methodological considerations. In Martin, D. B. (Ed.), *Mathematics teaching, learning, and liberation in the lives of black children* (pp. 39-62). Routledge: New York.
- † **Chazan, D.**, & Lueke, H. M.\* (2009). Exploring tensions between disciplinary knowledge and school mathematics: Implications for reasoning and proof in school mathematics. In D. Stylianou, E. Knuth, & M. Blanton (Eds.), *Teaching and learning mathematics proof Across the grades* (pp. 21-39). Erlbaum: Hillsdale, NJ.
- †+ Yerushalmy, M., & Chazan, D. (2008). Technology and curriculum design: The ordering of discontinuities in school algebra. In L. English (Ed.), *Second handbook of international research in mathematics education* (pp. 806-837). London: Taylor Francis.
- + Chazan, D. & Lewis, J. (2008). The mathematical education of doctorates in mathematics education. In R. Reys, & J. Dossey (Eds.), *U. S. doctorates in mathematics education: Developing stewards of the discipline* (pp. 75-85). Providence, RI: American Mathematical Society, Conference Board of the Mathematical Sciences: Issues in Mathematics Education, Vol. 15.
- †+ Chazan, D. (2008). The shifting landscape of school algebra in the United States: *No Child Left Behind*, high school graduation requirements, *Principles and Standards*, and technology. In C. Greenes & R. Rubenstein (Eds.), *Algebra and algebraic thinking in school mathematics* (pp. 19-33). 70<sup>th</sup> Yearbook of the National Council of Teachers of Mathematics. NCTM: Reston, VA.
- † **Chazan, D.**, Sword, S.\*, Badertscher, E.\*, Conklin, M.\*, Graybeal, C.\*, Hutchison, P.\*, Marshall, A. M.\*, and Smith, T.\* (2007). Learning to learn mathematics: Voices of doctoral students in mathematics education. In M. Strutchens & W. Gary Martin (Eds.), *The learning of mathematics*, 69<sup>th</sup> Yearbook of the National Council of Teachers of Mathematics. (pp. 367-379). NCTM: Reston, VA.
- Callis, S. (T), **Chazan, D.**, Hodges, K. (T), and (T) Schnepf, M. (2007). Starting a functions-based approach to algebra. In D. Chazan, S. Callis, & M. Lehman (Eds.), *Embracing reason: Egalitarian ideals and high school mathematics teaching* (pp. 26-45). New York: Taylor Francis.
- †+ **Chazan, D.**, Leavy, A., Birky, G.\*, Clark, K.\*, Lueke, H. M.\*, McCoy, W.\*, & Nyamekye, F.\* (2006). What NAEP can (and cannot) tell us about performance in algebra. In Kloosterman, P. & F. Lester (Eds.), *Results and interpretations of the 2003 Mathematics Assessment of the National Assessment of Educational Progress*. Reston, VA: National Council of Teachers of Mathematics.
- + Chazan, D. (2006). "What if not?" and teachers' mathematics. In F. Rosamund & L. Copes (Eds.), *Educational transformations: Changing our lives through mathematics; A tribute to Stephen Ira Brown* (pp. 3-20). Bloomington, Indiana: AuthorHouse.
- Pimm, D.** with D. Chazan and L. Paine. (2003) Being and becoming a mathematics teacher: Ambiguities in teacher formation in France. In T. Britton, L. Paine, S. Raizen, & D. Pimm (Eds.), *Comprehensive teacher induction: Systems for early career learning* (pp. 194-260). Dordrecht: Kluwer.

- †+ **Chazan, D.**, and Yerushalmy, M. (2003). On appreciating the cognitive complexity of school algebra: Research on algebra learning and directions of curricular change. In J. Kilpatrick, D. Schifter, & G. Martin (Eds.), *A research companion to the Principles and Standards for School Mathematics* (pp. 123-135). Reston: NCTM.
- †+ **Chazan, D.** and (T) Schnepf, M. (2002). Methods, goals, beliefs, commitments, and manner in teaching: Dialogue against a calculus backdrop. In J. Brophy (Ed.), *Advances in research on teaching, Vol. 9: Social constructivist teaching* (pp. 171–195). JAI Press.
- †+ Yerushalmy, M. and Chazan, D. (2002). Flux in school algebra: Curricular change, graphing technology, and research on student learning and teacher knowledge. In L. English (Ed.) *Handbook of international research in mathematics education* (pp. 725-755). Hillsdale, NJ: Erlbaum.
- Bethell S. (T)**, with D. Chazan, M. Dennis\*, B. Rosenthal\*, P. Lanier, and S. Wilcox, (2000). Nurturing a disposition of inquiry. In S. K. Wilcox & P. E. Lanier (Eds.), *Using assessment to reshape teaching: A casebook for mathematics teachers and teacher educators, curriculum and staff development specialists* (pp. 25-58). Mahwah, NJ: Erlbaum.
- Chazan, D., & Yerushalmy, M. (1998). Charting a course for secondary geometry. In R. Lehrer & D. Chazan (Eds.) *Designing learning environments to develop understanding of geometry and space*, (pp. 67-90). Hillsdale, NJ: Erlbaum.
- + **Chazan, D.**, & (T) Bethell, S. (1998). Working with algebra. In Mathematical Sciences Education Board, *High school mathematics at work: Essays and examples from workplace contexts to strengthen the mathematical education of all students* (pp. 35-41). Washington: National Research Council.
- + Chazan, D. (1996b), Teaching with terse tools. In D. Schifter (Ed.), *What's happening in math class, Volume 1: Reshaping practice through teacher narratives* (pp. 189-194). New York: Teachers College Press.
- Chazan, D. (1993). Instructional implications of a research project on students' understandings of the differences between empirical verification and mathematical proof. In J. Schwartz, M. Yerushalmy, & B. Wilson (Eds.), *The Geometric Supposer: What is this a case of?* (pp. 107-116). Hillsdale, NJ: Erlbaum. [Reprint of Chazan, D. (1989). Instructional implications of a research project on students' understandings of the differences between empirical verification and mathematical proof. In D. Hergert (Ed.), *Proceedings of the First International Conference on the History and Philosophy of Science in Science Teaching* (pp. 52-60). Tallahassee, FL: Florida State University.]
- Chazan, D.** and Yerushalmy, M. (1992). Research and classroom assessment of students' verifying, conjecturing, and generalizing in geometry. In D. Lesh, & S. Lamon (Eds.), *Assessing higher order understandings of foundation-level mathematical ideas* (pp. 89-118). Princeton: American Association for the Advancement of Science.

b. Articles in Refereed Journals. (+ designates invited)

- Chazan, D.** Brantlinger, A., Clark, L. & Edwards, A. (2013). What Mathematics Education Might Learn from the Work of Well-Respected African American Mathematics Teachers in Urban Schools. *Teachers College Record* 115(2). 1-40.
- Johnson, \*W., Nyamekye, \*F., Chazan, D. and Rosenthal, W. (2013). Teaching with Speeches: Using the Mathematics Classroom to Prepare Students for Life. *Teachers College Record* 115(2). 1-34.

- Birky, \*G. D., Chazan, D. and Farlow Morris. \*K., (2013). In Search of Coherence and Meaning: Madison Morgan’s Experiences and Motivations as an African American Learner and Teacher. *Teachers College Record* 115(2). 1-42.
- Herbst, P.** and Chazan, D. (2012). On the instructional triangle and the sources of justification for the actions of the mathematics teacher. *ZDM—The International Journal of Mathematics Education*, 44(5), 601–612.
- Chazan, D.**, Sela, \*H. and Herbst, P. (2012). Has the Doing of Word Problems in School Mathematics Changed? Initial Indications from Teacher Study Groups. *Cognition and Instruction*. 30(1), 1-38.
- Chazan, D.** and Herbst, P. (2012). Animations of classroom interaction: Expanding the boundaries of video records of practice. *Teachers College Record*, 114(3). 1-34.  
<http://bcove.me/iy7lsomi>
- Herbst, P.**, and Chazan, D. (2011). Research on practical rationality: Studying the justification of action in mathematics teaching. *The Mathematics Enthusiast*, 8(3), 405-462.
- Herbst, P.**, Nachlieli, T., and Chazan, D. (2011). Studying the practical rationality of mathematics teaching: What goes into “installing” a theorem in geometry? *Cognition and Instruction*, 29(2), 1-38.
- Chazan, D.** and Herbst, P. (2011). Challenges of particularity and generality in depicting and discussing teaching. *For the Learning of Mathematics*, 33(1), 9-13.
- + **Herbst, P.**, and Chazan, D. (2011). On creating and using representations of mathematics teaching in research and teacher development: Introduction to this issue. *ZDM—The International Journal of Mathematics Education*, 43(1), 1-6.
- Herbst, P.**, Chazan, D., Chen, C., Chieu, V.M., and Weiss, M. (2011). Using comics-based representations of teaching, and technology, to bring practice to university “methods” courses. *ZDM—The International Journal of Mathematics Education*, 43(1), 91-104.
- Chazan, D.** and Sandow, D.\* (2011). “Why did you do that?” Justification in algebra classrooms. *Mathematics Teacher*, 104(6). 460-464.
- Herbst, P.** and Chazan, D. (2009). Methodologies for the study of instruction in mathematics classrooms. *Recherches en Didactique des Mathématiques*, 29(1), 11-33.
- Chazan, D.**, Yerushalmy, M., & Leikin, R. (2008). An analytic conception of equation and teachers’ views of school algebra. *The Journal of Mathematical Behavior*, 27(2), 87-100.
- Schnepf, M. (T) and Chazan, D. (2004). Incorporating experiences of motion into a calculus classroom. [videopaper, no page numbers]. *Educational Studies in Mathematics*. 57(3).
- Herbst, P. and Chazan, D. (2003). Exploring the practical rationality of mathematics teaching through conversations about videotaped episodes: The case of engaging students in proving. *For the Learning of Mathematics*, 23(1), 2-14.
- Chazan, D. and Ball, D. L. (1999). Beyond being told not to tell. *For the Learning of Mathematics*, 19(2), 2-10.
- Chazan, D. (1999). On teachers’ mathematical knowledge and student exploration: A personal story about teaching a technologically supported approach to school algebra. *International Journal for Computers in Mathematics Learning*, 4.(2-3), 121-149. [Reprinted in **Chazan, D.**, Callis, S., & Lehman, M. (2007). *Embracing reason: Egalitarian ideals and high school mathematics teaching*. New York: Taylor Francis.]

- Chazan, D.**, Ben-Chaim, D., Gormas, J.\*, Schnepf, M. (T), Lehman, M. (T), Bethell, S. (T), and (T) Neurither, S. (1998). Shared teaching assignments in the service of mathematics reform: Situated professional development. *Teaching and Teacher Education*, 14(7), 687-702. [Reprinted in **Chazan, D.**, Callis, S., & Lehman, M. (2007). *Embracing reason: Egalitarian ideals and high school mathematics teaching*. New York: Taylor Francis.]
- Chazan, D. (1996). Algebra for all students? *Journal of Mathematical Behavior*, 15(4). 455-477.
- Chazan, D. (1993).  $F(x)=G(x)$ ?: An approach to modeling with algebra. *For the Learning of Mathematics*, 13 (3), 22-26.
- Chazan, D. (1993). High school geometry students' justifications for their views of empirical evidence and mathematical proof. *Educational Studies in Mathematics*, 24 (4), 359-387.
- Chazan, D. (1992). Knowing school mathematics: A personal reflection on the NCTM's Teaching Standards. *Mathematics Teacher*, 85, 371-375.
- Yerushalmy, M.** and Chazan, D. (1992). Guided inquiry and geometry: Some aspects of teaching with technology. *Zentralblatt fur Didaktik der Mathematik--International Reviews on Mathematical Education*. 92(5), 172-177.
- Chazan, D. (1990). Implementing the standards: Microcomputer-aided student exploration in geometry. *Mathematics Teacher*, 83, 628-635. [Reprinted in S. Brown & M. Walter (Eds.), (1993), *Problem posing: Reflections and applications*. Hillsdale: Lawrence Erlbaum.]
- Chazan, D. (1990). Quasi-empirical views of mathematics and mathematics teaching. *Interchange*, 21(1), 14-23.
- Yerushalmy, M. and Chazan, D. (1990). Overcoming visual obstacles with the aid of the Supposer. *Educational Studies in Mathematics*, 21(3), 199-219. [Reprinted in J. Schwartz, M. Yerushalmy, & B. Wilson (Eds.), *The Geometric Supposer: What is this a case of?* Hillsdale, NJ: Erlbaum.]
- Yerushalmy, M., Chazan, D., and Gordon, M. (1990). Mathematical problem posing: implications for facilitating students inquiry in classrooms. *Instructional Science*, 19, 219-245. [reprinted in J. Schwartz, M. Yerushalmy, & B. Wilson (Eds.), *The Geometric Supposer: What is this a case of?* Hillsdale, NJ: Erlbaum,]

c. Monographs, Reports, and Extension Publications.

- Chazan, D. (1995) *Where do students' conjectures come from? Empirical exploration in mathematics classes*. National Center for Research on Teacher Learning, Craft Paper 95-8. E. Lansing, MI: Michigan State University.
- Chazan, D. (1988). *Similarity: Exploring the understanding of a geometric concept* (Tech. Rep. 88-15). Cambridge: Harvard Graduate School of Education, Educational Technology Center.
- Yerushalmy, M., Chazan, D., and Gordon, M. (1987). *Guided inquiry and technology: A year long study of children and teachers using the Geometric Supposer* (Tech. Rep. 88-6). Cambridge: Harvard Graduate School of Education, Educational Technology Center.

d. Book Reviews, Other Articles, and Notes. († designates refereed, + designates invited)

- †+ **Chazan D.**, & Edwards, A. R. (2010) Mathematics Educators Respond to Kaput's "Algebra Problem." A Review of Algebra in the Early Grades. *Journal for Research in Mathematics Education*, 41(2), 203-208.

†+ Chazan, D. (2002). A teacher representing teaching (Book review). *Journal of Mathematics Teacher Education*. 5(2), 187-199.

e. Selected Talks, Abstracts, and Other Professional Papers Presented.

i. Invited talks, etc. (includes refereed conference talks with no proceedings)

International († designates refereed, + designates invited, K designates keynote)

+ Chazan, D. (2013, January). STEM Teacher Education in the United States: An Overview in Two Parts. Workshop for Invited Korean Teachers. University of Maryland, College Park.

† Chazan, D. & P. Herbst. (2013, January) “A design experiment in practice-based, hybrid mathematics teacher education,” Teacher-led Inquiry and Learning Design: The Virtuous Circle at the Alpine RendezVous, Grenoble, France.

National († designates refereed, + designates invited, K designates keynote)

+ Chazan, D., Herbst, P. & L. Clark (2013, April). “Research on the Teaching of Mathematics: Wrestling With Context,” in session on AERA Handbook for Research on Teaching, *American Educational Research Association Annual Meeting*. San Francisco, CA.

+ Chazan, D. (2013, April). Discussant for symposium “Teacher Noticing of Student Thinking: New Domains, New Methodologies, and New Perspectives.” *American Educational Research Association Annual Meeting*. San Francisco, CA.

† Buchbinder, O. & Chazan, D. (2013, April). Using non-standard student solutions to probe what it means to solve linear equations in school. *Annual meeting of American Educational Research Association*, San Francisco, CA,

† Buchbinder, O. & Chazan, D. (2013, April). Developing an index of recognition of a norm using multimedia questionnaires and a survey instrument for the case of solving word problems in algebra. In symposium titled “Methods for the study of decisions in mathematics teaching.” *Annual meeting of the National Council of Teachers of Mathematics Research Pre-session*, Denver, CO.

+ Chazan, D. (2013, April) Algebraic thinking when solving equations and doing word problems. *Annual Meeting of the National Council of Teachers of Mathematics*, Denver, CO.

† Gonzalez, G., Herbst, P., Crespo, S., Johnson, H.L., and Chazan, D. (2012, April). Discussant. “Designing and creating representations of mathematics teaching.” *Annual meeting of the National Council of Teachers of Mathematics Research Pre-session*, Philadelphia, PA.

Regional, State, Local († designates refereed, + designates invited, K designates keynote)

+ Chazan, D. (2013, May), Panelist on “Growing a STEM Teacher Workforce: How do we create more strong STEM teachers?” Change the Equation STEM Salon, Washington, DC.

+ Chazan, D. (2013, February), “Word Problems as a Window into the Nature of Mathematics Teaching,” Teachers College, Columbia University, New York, NY.

+ Chazan, D. (2012, October), “New Technologies And The Challenges Of Particularity And Generality In Depicting And Discussing Teaching,” University of California, San Diego, Mathematics and Science Education Research Seminar Series, San Diego, CA.

+ Chazan, D. (2012, September), “How is Algebra Teaching Changing? Using Animations, Comic Strips, and On-line Questionnaires to Talk about Teaching,” Hood College, Mathematics Education Colloquium, Frederick, MD.

+ Chazan, D. (2011, July). “Questions About Shifts in the Curriculum Process.” Invited talk. Israeli Center for Educational Technology. Tel Aviv, Israel.

ii. Refereed Conference Proceedings. (+ *designates invited*)

### International

**Chazan, D.**, Herbst, P., Sela, H.\*, and (T) R. Hollenbeck, (2011). Rich Media Supports For Practicing Teaching: Introducing Alternatives Into A “Methods” Course. In *Proceedings of the 35th Conference of the International Group for the Psychology of Mathematics Education*. (Vol. I: pp. 119-123). Ankara, Turkey: PME.

+ **Chazan, D.** and Filloy, E. (2008) TSG 9: Research and development in the teaching and learning of algebra. In M. Niss & E. Emborg (Eds.), *The Proceedings of the Tenth International Congress for Mathematics Education* (pp. 327-330). Copenhagen, Denmark.

f. Films, CDs, Photographs, etc.

**Yerushalmy, M.**, Elikan, S. & Chazan, D. (2000) Discussions in the Mathematics Classroom. Multimedia package in Hebrew and English (2 CDs of video and documents and a booklet). University of Haifa and Center for Educational Technology.

g. Exhibits, Performances, Demonstrations, and Other Creative Activities (Conferences initiated and planned)

2009-2011 Three annual, three-day Representations of Mathematics Teaching conferences. National conferences for teacher educators and researchers sponsored by ThEMaT project, University of Michigan, Ann Arbor, MI.

2009 & 2011 Two four-day workshops for advanced doctoral students sponsored by the MACMT Case Studies Research team. University of Maryland, College Park, MD.

2003-2010 Annual, three-day MACMTL doctoral student research conference involving students from The Pennsylvania State University, University of Delaware, and University of Maryland. Location varied.

i. Contracts and Grants.

### Principal Investigator/Co-Principal Investigator

Developing Rich Media-Based Materials for Practice-Based Teacher Education (with P. Herbst). National Science Foundation, 2013-2017, \$2,650,526 (PI). DRL1316241.

Equity in Mathematics Education (EME): PGCPs Facing the Common Core and Equity (with B. Quintos). Maryland Higher Education Commission. 3/2012- 3/2013, \$75,250 (principal investigator).

UMCP elementary school STEM add-on endorsement and specialization (with B. Quintos and D. Levin). Maryland State Department of Education Race To the Top grant, 2011-2014, \$77,160 (principal investigator).

UMCP/PGCPs Grades 4-9 school mathematics partnership: Developing school capacity to support high quality teaching in high need schools (with B. Quintos and W. Johnson). Maryland Higher Education Commission, 2009-2010, \$181,519 (principal investigator).

Supports for learning to manage classroom discussions: Exploring the role of practical rationality



and mathematical knowledge for teaching (with P. Herbst). National Science Foundation 2009-2014, \$1,083,952 subcontract from the University of Michigan (co-principal investigator for \$3,467,721 award, principal investigator at the University of Maryland).

Thought experiments in mathematics teaching (with P. Herbst, J. Lemke, and R. Verhey). National Science Foundation, 2004-2009, \$924,087 subcontract from the University of Michigan (co-principal investigator for \$4,376,477 award, principal investigator at the University of Maryland).

Mid-Atlantic Center for Mathematics Teaching and Learning (with J. T. Fey, P. F. Campbell, J. Hiebert, and M. K. Heid). National Science Foundation, 2000-05, \$9,575,724; 2006-2012, \$10,769,586 (2002-2007 senior researcher; 2007-2012 co-principal investigator at the University of Maryland).

The future of high school mathematics (with L. Rosen and J. Fey). National Science Foundation Grant, 2008, \$174,325 (principal investigator).

Improving teacher quality: Supporting the PGCP/UM math partnership. Maryland Higher Education Commission, 2008-2009 \$190,728 (principal investigator).

j. Fellowships, Prizes, and Awards.

- 1995-1996 History of Mathematics Fellow, American Mathematical Association
- 1993-1995 National Academy of Education Post-Doctoral Fellow, Spencer Foundation.
- 1990-1995 Dow-Corning Clinical Assistant Professor, Michigan State University.
- 1988-1989 Schumann Scholarship, Harvard Graduate School of Education.
- 1986-1987 Schepp Foundation Fellow. Harvard Graduate School of Education.
- 1985-1986 Schumann Scholarship, Harvard Graduate School of Education.
- 1981 Doris Brewer Cohen Thesis Award. Brandeis University.

k. Editorships, Editorial Boards, and Reviewing Activities for Journals and Other Learned Publications.

Editorial Boards

- 2000-present Advisory Board. *For the Learning of Mathematics*.
- 2007-2013 International Advisory Board, *Research in Mathematics Education: The International Journal of the British Society for Research into Learning Mathematics*.
- 1999-2002 Editorial Board, *International Journal for Computers in Mathematics Education*.
- 1998-2001 Editorial Panel, *Mathematics Teacher*.
- 1987-1989 Board Member, *Harvard Educational Review*. Cambridge, MA. 1987-1989.

Initiated a symposium on the use of computers in schools which was subsequently reprinted under the title "Visions for the Use of Computers in Classroom Instruction: Symposium and Responses." As 1988-89 Book Review Editor, oversaw and coordinated the review section for a quarterly journal.

Reviewer.

Regular reviewer for: Journal for Research in Mathematics Education, Journal of Mathematics Teacher Education, American Educational Research Association Annual Conference, Annual Conference of the International Group for the Psychology of Mathematics Education, Research in Mathematics Education, For the learning of mathematics.

Occasional reviewer. Cognition and Instruction, Journal of the Learning Sciences, Contemporary Educational Psychology, Journal of Curriculum Studies, Journal of Mathematical Behavior, Mathematics Teaching and Learning, ZDM, Research in Collegiate Mathematics Education, International Journal of Computers in Mathematics Learning, American Educational Research Journal.

Book proposal reviewer: Lawrence Erlbaum, Teachers College Press, National Council of Teachers of Mathematics.

### 3. Teaching, Mentoring, and Advising

#### a. Courses taught in the last five years (Fall 2008 – Spring 2013)

EDCI 753 Foundations of Mathematics Education III: Curriculum, Fall 2008, Fall 2010, Fall 2012.

EDCI 758 Research Seminar in Mathematics Education, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall, 2012, Spring 2013.

EDCI 788C (formerly Y) Mathematics Research for Mathematics Educators Spring 2012

EDCI 798 Special problems in teacher education, Fall 2009, Summer 2010

EDCI 799 Masters thesis research, Fall 2009.

EDCI 899 Doctoral dissertation research, Fall 2008, Spring 2009, Summer 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013.

#### f. Advising: Research Direction.

##### i. Undergraduate.

##### ii. Master's.

#### Master's advisees, research degree completed:

2006-2009 Andrew Callard, M.A.

Thesis title: Subtle Cues and Hidden Assumptions: An Action Research Study of Teacher Questioning Patterns in 7th and 8th Grade Mathematics Classrooms

2006-2008 Kyle Cochran, M.A.

Thesis title: Math and Math-in-School: Changes in the Treatment of the Function Concept in Twentieth Century Secondary Algebra Textbooks.

2002-2004 Michael Conklin, M. A.

Thesis title: Found in Translation: A Comparison of American, German, and Japanese Mathematics Texts and Exercises.

##### iii. Doctoral.

#### Doctoral advisees, degree completed, University of Maryland:

2004-2010 Farhaana Nyamekye, Ph.D.

Thesis title: Embracing mathematics identity in an African-centered school: Construction and interaction of racial and mathematical student identities [Assistant Professor, Mathematics Department, University of Maryland University College]

- 2003-2009 H. Michael Lueke, Ph.D.  
Thesis title: Preservice Teachers' Mathematical Knowledge for Teaching: A Comparison of Two University Mathematics Courses [Assistant Professor, St. Louis Community College, Mathematics Department.]
- 2002-2009 Richard Mark Hollenbeck, Ph.D.  
Thesis title: Understanding the Challenges of Implementing a Multiple Solution Norm [Teacher, Howard County Public Schools; Adjunct faculty member, University of Maryland.]
- 2003-2009 Anne Marie Marshall, Ph.D.  
Thesis title: Understanding Opportunities To Practice What We Preach: Mathematical Experiences Of Mathematics Education Doctoral Students. [Assistant Professor, Lehman College]
- 2003-2008 Toni Michelle Smith, Ph.D.  
Thesis title: An Investigation Into Student Understanding of Statistical Hypothesis Testing. [American Institutes for Research, Washington DC]
- 2002-2007 Eden Meredith Badertscher, Ph.D.  
Thesis title: Teachers' Relationships With Mathematics: A Case Study of the Connections Between These Relationships and Teachers' Content Experiences. [Senior Project Direct, Education Development Center, Waltham, MA.]

Doctoral advisees, degree completed, other universities:

- 2002-2006 Yuichi Handa, Ph.D. (co-advisor of degree from University of Delaware)  
Thesis title: Relationships to Mathematics [Accepted tenure-track position, Mathematics Department, California State University, Chico]
- 1996-2005 Johnson, Whitney Johnson, Ph.D. (Michigan State University)  
Thesis title: Aristotle As Secondary Mathematics Teacher Educator: Metaphors and Strengths. [tenure-line faculty, Morgan State University]
- 1996-2001 Faaiz Gierdien, Ph.D. (Michigan State University)  
Thesis title: A Comparative Study of the Rhetoric of Policy-makers and Mathematics Teachers in the Western Cape, South Africa. [Tenure-track position, University of Stellenbosch, South Africa]
- 1993-1998 Janice Gormas, Ph.D. (Michigan State University)  
Thesis title: The Centrality of a Teacher's Professional Transformation in the Development of Mathematical Power: A Case Study of One High School Mathematics Teacher. [Tenured faculty member, Calvin College]
- 1990-1994 Virginia Keen, Ph.D. (Michigan State University)  
Thesis title: Mathematics Department Instructors' Conceptualizations of the Roles Mathematics Content Courses Play in Elementary Teacher Education Programs. [Faculty member, Wright State University]

iv. Post-Doctoral Fellows.

- 2011-2013 Orly Buchbinder, Ph.D. . [Assistant Professor, University of New Hampshire]
- 2007-2011 Hagit Sela, Ph.D. [Researcher, American Institutes for Research, Washington, D.C.]
- 2005-2007 Whitney Johnson, Ph.D. [Assistant Professor, Morgan State University]
- 2004-2005 Shoshana Gilead, Ph.D. [Senior developer, Center for Educational Technology, Tel Aviv, Israel]
- 2003-2005 Sarah Sword, Ph.D. [Senior Research Associate, Director, Center for Scholarship of School Mathematics, Education Development Center, Newton, MA,]

4. Service

a. Professional.

i. Offices and committee memberships held in professional organizations.

- November 2011-July 2014 Member, Digital Library of Practice Advisory Group to Board, National Council of Teachers of Mathematics.
- June 2010-September 2012 Member Writing Group, Mathematics Education of Teachers II. Member Working Group on the Preparation of Secondary Teachers, Conference Board for the Mathematical Sciences. Publication created: Conference Board of the Mathematical Sciences (2012). *The Mathematical Education of Teachers II*. Providence RI and Washington DC: American Mathematical Society and Mathematical Association of America.
- March 2010-October 2011 Chair, Video Library Task Force and Chair, Cluster Review, Evaluation, and Development Task Force, National Council of Teachers of Mathematics.
- July 2004 Co-Chair, Topic Study Group 9: The teaching and learning of algebra, ICME10, Copenhagen..
- 2002-2004 Co-Chair, American Educational Research Association Special Interest Group for Research in Mathematics Education,