

Victoria Hand

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University of Colorado-Boulder
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EDUCATION

Ph.D., Educational Psychology June, 2003	School of Education Stanford University
M.A., Learning, Design, and Technology June, 1998	School of Education Stanford University
B.A., Quantitative Economics and Decision Sciences June, 1989	University of California, San Diego

APPOINTMENTS

Assistant Professor, Curriculum and Instruction, Math Education, University of Colorado, Boulder (2007 – 2010)
Assistant Professor, Curriculum and Instruction, Math Education, University of Wisconsin, Madison (2005 – 2007)
Postdoctoral Researcher, Education, Mathematics, Science and Technology, University of California, Berkeley (2003 – 2005)

AWARDS AND RESEARCH GRANTS

Diversity and Excellence Award, University of Colorado, Boulder, 2009
WISE (Women Investing in the School of Education) Small Grant, 2009
Vilas Award, University of Wisconsin-Madison, 2006
American Educational Research Association (AERA)/IES Research Grant, 2003
Award for Research on Issues Relevant to Minority Education, Stanford University, 2001

RESEARCH EXPERIENCE

"Teaching Mathematics for Equity", *Lead Researcher*, 9/06 - 6/07: Developed and led a professional development *working group* of researchers and teachers to analyze perspectives on and tools for equity in mathematics education. Theoretical approaches examined include Culturally Relevant Pedagogy, Complex Instruction, Funds-of-Knowledge, and Teaching for Social Justice. Classroom design experiments were also conducted. Conference presentation and book chapter.

"Preparation of Pre-Service Middle School Mathematics Teachers", *Faculty*, 6/05 - 9/07: Member of interdisciplinary committee consisting of faculty from mathematics and mathematics education department charged with analyzing and re-designing preparation program for pre-service mathematics teachers. Three-pronged approach to redesign and align content and methods courses within the two departments, develop a middle school track, and train new cadre of mathematics and mathematics education graduate students in research on higher education in mathematics education. Funded by the SCALE project (a \$35M NSF-MSP) and University of Wisconsin-Madison.

"Race, Culture, and the Construction of Opposition in Mathematics Classrooms", *Principal Investigator*, 6/05 – 9/06: Conducted a year-long study on the development of opportunities to learn mathematics in low- and high-track middle school mathematics classrooms with diverse populations of students. Opportunities for learning (and resisting) mathematics were analyzed with respect to patterns in task structure, teacher responsiveness, student positioning, and the negotiation of students' discourse activities. Findings presented at professional conferences and in a handbook chapter. Journal article in press.

“Diversity in Mathematics Education Project (DiME)”, P.I.s, Dr. Alan Schoenfeld, UC Berkeley, Dr. Thomas Carpenter, UW-Madison, and Dr. Megan Franke, UCLA, *Faculty/Postdoctoral Researcher*, 9/03 – 9/09: Member of the DiME center, a large-scale research consortium of four universities across the United States, which aims to prepare the community of practitioners and researchers involved in mathematics education for increasingly diverse mathematics classrooms. Separate small grant awarded by IES/AERA to explore the features of participation structures in mathematics classrooms that afford different “handholds” for engagement and (thus) success of students from a variety of social and cultural backgrounds. Numerous journal articles and conference publications developed.

“Cases of Equitable Mathematics Teaching”, Dr. Jo Boaler, Stanford University, CA, *Researcher*: 9/03 – 6/04 Consultant on teacher professional development project that created a series of video-based cases on mathematical teaching practices that support equitable classroom learning for new teachers. Captured, analyzed, and selected cases of “equitable mathematics teaching”.

“Construction of Mathematical Identities in Middle School”, Drs. James Greeno & Melissa Gresalfi, Stanford University, CA, *Research Assistant*, 8/02 – 8/03, Member of research team that examined the nature and development of mathematical identities in relation to both subject-matter content learning and social participation in middle school classrooms. Focus on teacher identity and classroom practice through observation, videotapes interviews, and participatory research approaches.

“On the Court and In the Classroom: Mathematical Identities of Basketball Players”, Dr. Na’ilah Nasir, Stanford University, CA, *Research Assistant*, 8/01 – 9/03: Member of two-person research team on a study funded by Spencer Foundation that investigated participation practices and identity development of African American high school basketball players in the contexts of basketball and mathematics class. Co-designed research instruments; managed school-study communications; and documented classes, practices and games through videotape. Research article published.

"The Algebra Project", Dr. James Greeno, Stanford University, CA, *Research Assistant*, 3/02 – 8/02: Participated in videotape interaction analysis of the construction of mathematical competence, authority, and identity in Algebra Project middle schools. Findings published in research journals and at professional conferences.

"Stanford University Mathematics Teaching and Learning Study", Dr. Jo Boaler, Stanford University, CA, *Research Assistant*, 6/99 – 9/01: Member of research team in longitudinal study of traditional versus reform mathematics instruction. Ethnographer in one of three high schools; participated in study design, development and administration of interview protocols, development and analysis of quantitative surveys, and development and coding of qualitative data; documented classes through observation and videotape; managed school-study communications; wrote analytic and synthesis reports and scholarly papers; and presented findings professional conferences.

"Educational Software Components of Tomorrow (ESCOT) Project", Dr. Jeremy Roschelle, SRI International, Menlo Park, CA, *Research Assistant*, 9/98 – 9/01: Member of research and design team of NSF-funded study that created a test bed of computer-based, middle school mathematics activities. Facilitated interdisciplinary teams of researchers, technology designers, and teachers. Conducted research studies on changes in students’ mathematical understanding and strategy use. Research article published.

COURSES TAUGHT

Knowing and Learning Mathematics and Science, University of Colorado-Boulder
Theories of Learning in Science and Mathematics Education, University of Colorado-Boulder
Educational Psychology and Adolescent Development, University of Colorado-Boulder
Teaching for Understanding and Equity, University of Colorado-Boulder
Mathematics Knowing for Equitable Teaching, University of Colorado-Boulder
Theories of Mathematics Learning, University of Wisconsin, Madison
Curricular Issues in Mathematics Education, University of Wisconsin, Madison

Geometric Inference and Reasoning, University of Wisconsin, Madison
Diversity in Mathematics Education Cross Campus Seminar, University of Wisconsin, Madison
Elementary Math Methods, Various Universities
Methods for the Study of Equitable Mathematics Education, University of California at Berkeley
The Psychology of Education, Santa Clara University, CA

PEER-REVIEWED JOURNAL ARTICLES

- Hand, V. (2010). The co-construction of opposition within a low-track mathematics classroom. *American Educational Research Journal*, 47(1), 97-132.
- Gresalfi, M., Martin, T., Hand, V., & Greeno, J. G. (2009). Constructing Competence: An Analysis of Student Participation in the Activity Systems of Mathematics Classrooms. *Educational Studies in Mathematics*, 70(1), 49-70.
- Nasir, N. S., Hand, V., & Taylor, E. V. (2008). Culture and Mathematics in School: Boundaries between “Cultural” and “Domain” Knowledge in the Mathematics Classroom and Beyond. *Review of Research in Education*, 32, 187-240.
- Nasir, N. S. & Hand, V. (2008). From the Court to the Classroom: Opportunities for Engagement, Learning and Identity in Basketball and Classroom Mathematics. *Journal of the Learning Sciences*, 17(2), 143-180.
- Nasir, N. S. & Hand, V. (2006). Exploring Sociocultural Perspectives on Race, Culture, and Learning. *Review of Educational Research*, 76(4), 449-475.
- Hand, V. (2006). Operationalizing Culture and Identity in Ways to Capture the Negotiation of Participation across Communities. *Human Development*. 49(1), 36-41.
- Hand, V. (2003). Reframing Participation: Meaningful Mathematical Activity in Diverse Classrooms. Unpublished dissertation, Stanford University, Stanford, CA.

BOOK CHAPTERS

- Hand, V., Quindel, J., & Esmonde, I. (2010). Status and Competence as Entry Points into Discussions of Equity in Mathematics Classrooms. In M. Q. Foote (Ed.), *Mathematics Teaching & Learning in K-12: Equity and Professional Development*. New York: Palgrave.
- DiME. (2007). Culture, Race, Power, and Mathematics Education. In F. Lester (Ed.), *Handbook of Research on Mathematics Teaching and Learning* (2nd ed.). Reston, VA: NCTM.

SELECTED MANUSCRIPTS IN PREPARATION

- Hand, V. (submitted). Integrated versus Discrete Perspectives: Characterizing Pre-Service Teacher’s Dispositions towards Culture, Power and Mathematics Learning. Submitted to a Special Issue for *Educational Studies in Mathematics*.
- Staples, M. & Hand, V. (in preparation). Co-constructing Contributions: Broadening the Participation of Secondary Mathematics Students in Inquiry-Oriented Learning Environments.

SELECTED CONFERENCE PRESENTATIONS

- Hand, V. (2010). Conceptual Agency, Self-Expression & Status: Levels of Mathematical Competence. Paper presented at the 2010 National Council of Mathematics Teachers, San Diego, California.
- DiME (2008). Foregrounding Issues of Equity and Diversity in Mathematics Education Research: Implications for Research Methods and Teacher Development. Professional Development Seminar held at the 2008 American Educational Research Association Conference, San Diego, California.
- Bartell, T., Bannister, V., Battey, D., Hand, V. & Spencer, J. (2007). Theorizing Race and Power in Mathematics Education. Paper presented at the 2007 American Educational Research Association Conference, Chicago, Illinois.

Brewley-Corbin, D., Hand, V. & Aguierre, J. (2007). Promises and Challenges of Equity in Teacher Education and Professional Development. Paper presented at the 2007 National Council of Mathematics Teachers, Atlanta, Georgia.

Hand, V., DeAnda, P., Willaims, C. (2007). "What counts as mathematical activity and who decides?": the Discourse of mathematics in mathematics education. Symposium held at the Twenty Ninth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Lake Tahoe, California.

Hand, V., Bannister, V. P., Bartell, T. G., Battey, D., & Spencer, J. (2006). Inequity in Mathematics Education: Moving beyond individual-level explanations of differential mathematics achievement to account for race and power. Paper presented at the Twenty Eighth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mérida, Mexico.

Hand, V. (2005). Race, Culture, and the Construction of Opposition in Mathematics Classrooms. Paper presented at the 2005 American Educational Research Association Annual Conference.

Hand, V. (2004). Meaningful mathematical activity: Opportunities for linking in diverse mathematics classrooms. Presented at the 2004 Psychology of Mathematics Education Conference, North America.

Hand, V. (2004). Re-framing Participation: Meaningful Mathematical Activity. Presented at the 2004 American Educational Research Association Annual Meeting.

Hand, V. (2003). The Development of Third Spaces in Mathematical Activity. Presented at the 2003 American Educational Research Association Annual Meeting.

Hand, V. (2002). Constructing Mathematical Competence: Students as Authors. Presented at the 2002 International Conference of Learning Sciences Meeting.

Boaler, J., Hand, V., Sommerfeld, M.C. & Staples, M. (2001). Agency and authority in reform visions of mathematics teaching. Paper presented in Symposium at the 2001 American Educational Research Association Annual Conference.

PROFESSIONAL MEMBERSHIPS

American Educational Research Association, Member and Reviewer

National Council of Teachers of Mathematics, Member and Reviewer

Mathematical Association of America, Member

Human Development, Reviewer

Journal of the Learning Sciences, Reviewer

Journal of Teacher Education, Reviewer

Journal of Research in Mathematics Education, Reviewer

National Council of Mathematics Teachers, Member and Reviewer

National Science Foundation, Panel Member

Psychology of Mathematics Education-North America Chapter, Member and Reviewer