

## Victoria Hand

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University of Colorado-Boulder  
School of Education  
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### EDUCATION

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- 9/98 – 6/03 STANFORD UNIVERSITY, Stanford, CA  
Ph.D., Educational Psychology, School of Education
- 9/96 – 9/98 STANFORD UNIVERSITY, Stanford, CA  
M.A., Learning, Design, and Technology, School of Education, June, 1998
- 9/84 – 6/89 UNIVERSITY OF CALIFORNIA AT SAN DIEGO, San Diego, CA  
B.A., Quantitative Economics and Decision Sciences, June 1989

### AWARDS AND RESEARCH GRANTS

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- 2006 Vilas Award, University of Wisconsin-Madison
- 2003-2004 American Educational Research Association (AERA)/IES Research Grant
- 2002 Spencer Foundation Small Research Grant
- 2001 Award for Research on Issues Relevant to Minority Education

### RESEARCH EXPERIENCE

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- 9/06 - 6/07 "Teaching Mathematics for Equity"  
*Principal Investigator*  
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 under production.
- 6/05 - 9/07 "Preparation of Pre-Service Middle School Mathematics Teachers"  
*Faculty*  
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.
- 6/05 – 9/06 "Race, Culture, and the Construction of Opposition in Mathematics Classrooms"  
*Principal Investigator*  
Conducted a year long research 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 conferences and included in a handbook chapter. Manuscript under review.
- 9/03 – Present "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*

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 publications and conference publications developed.

9/03 – 6/04

“Cases of Equitable Mathematics Teaching”, Dr. Jo Boaler, Stanford University, CA  
*Researcher*

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”.

8/02 – 8/03

“Construction of Mathematical Identities in Middle School”, Dr. James Greeno, Stanford University, CA  
*Research Assistant*

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.

8/01 – 9/03

“On the Court and In the Classroom: Mathematical Identities of Basketball Players”, Dr. Na’ilah Nasir, Stanford University, CA  
*Research Assistant*

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. Paper published.

3/02 – 8/02

The Algebra Project, Dr. James Greeno, Stanford University, CA  
*Research Assistant*

Participated in videotape interaction analysis of the construction of mathematical competence, authority, and identity in Algebra Project middle schools. Presented findings at professional conference, and submitted for publication. Manuscript submitted.

6/99 – 9/01

Stanford University Mathematics Teaching and Learning Study, Professor Jo Boaler, Stanford University, CA  
*Research Assistant*

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 at conference.

9/98 – 9/01

Educational Software Components of Tomorrow (ESCOT) Project, Dr. Jeremy Roschelle, SRI International, Menlo Park, CA  
*Research Assistant*

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. Paper published

#### TEACHING EXPERIENCE AND INVITED LECTURES

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- 8/08 - 12/08 "Theories of Learning in Science and Mathematics Education", University of Colorado-Boulder, Boulder, CO
- 8/08 - 12/08 "Educational Psychology and Adolescent Development", University of Colorado-Boulder, Boulder, CO
- 7/08 - 8/08 "Teaching for Understanding and Equity", University of Colorado-Boulder, Boulder, CO
- 9/07 - 12/07 "Mathematics Knowing for Equitable Teaching", University of Colorado-Boulder, Boulder, CO  
Designed and instructed course on the nature of mathematics knowing teachers need to reach all students in K12 classrooms. The course explored the Mathematics Knowledge for Teaching (MKT) framework, and the new challenges it poses to mathematics educators and researchers in re-conceptualizing the professional development of mathematics teachers. This framework was juxtaposed with sociocultural theories of learning and critical theories of race to consider how mathematics knowing for *equitable* teaching is necessarily situated within multiple communities and power structures. Students investigated and interrogated fundamental ideas in empirical research, theoretical debates, and educational policies about what mathematics students should learn, what it takes to teach this, and how mathematics teaching (and learning) is related to broader contexts and communities.
- 1/06 - 5/07 "Theories of Mathematics Learning", University of Wisconsin, Madison, WI
- 8/06 - 12/06 "Curricular Issues in Mathematics Education", University of Wisconsin, Madison, WI
- 8/06 - 12/06 "Geometric Inference and Reasoning", University of Wisconsin, Madison, WI  
Co-designed and instructed a geometric thinking course for pre-service elementary school teachers with a mathematics professor. The course included students projects focused on soliciting and evaluating students mathematical thinking and analyzing geometric tasks across textbooks.
- 9/05 – 9/07 “DiME Cross Campus Seminar”, University of Wisconsin, Madison, WI  
Collaborating with faculty at two other DiME campuses to develop a seminar for DiME graduate students on issues of equity in professional development for mathematics teachers. PD programs we will examine include: Japanese Lesson Study, CGI, student thinking, and hybrid programs at UCB, UCLA, and UW-Madison.
- 8/05 - Present “Elementary Math Methods: Grades 4-8”, Various Universities  
Designed and instructed courses in mathematics teaching and learning for prospective elementary and middle school teachers. Topics ranged from creating a classroom culture that supports development of students’ mathematical proficiency and positive identity to interpreting and developing students’ mathematical thinking, and finally to designing, teaching, and improving classroom mathematics lessons.
- 9/04 – 1/05 “Methods for the Study of Equitable Mathematics Education”, University of California at Berkeley, CA  
Designed and facilitated graduate level course for fellows in the Diversity in Mathematics Education Center. Course held across three DiME sites (UCB, UW at Madison, and UCLA) via teleconferencing and examined methods and constructs used in the research in diversity and equity in mathematics education. Data from empirical research studies was explored, analyzed, and synthesized to inform the design of students’ research projects.
- 10/03 “Vygotsky: Personal History and Theory Overview”, Stanford University, CA  
*Guest Lecturer*

Developed a three-hour course for upper level graduate students that briefly examined the life history of Lev Vygotsky and his cultural historical approach to development and learning.

7/03 – 9/03 “The Psychology of Education”, Santa Clara University, CA

6/01 – 8/01 “Algebraic Thinking and Number Sense”, Upward Bound, San Francisco, CA  
*Course Designer and Instructor*

Developed and taught introductory course on algebraic thinking and number sense for high school students.

#### SELECTED PUBLICATIONS

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Hand, V. (under review). The co-construction of opposition in a low-track mathematics classroom.

Staples, M. & Hand, V. (in preparation). Co-constructing contributions: Broadening the participation of secondary mathematics students in inquiry-oriented learning environments.

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.

Gresalfi, M., Martin, T., Hand, V., & Greeno, J. G. (2008). Constructing Competence: An Analysis of Student Participation in the Activity Systems of Mathematics Classrooms. *Educational Studies in Mathematics*, 70(1), 49-70.

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.

Nasir, N. S., & Hand, V. (2006). Exploring sociocultural perspectives on race, culture, and learning. *Review of Educational Research*, 76(4), 449-475.

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). Operationalizing culture and identity in ways to capture the negotiation of participation across communities. *Human Development*.

Hand, V. (2003). Reframing Participation: Meaningful mathematical activity in diverse classrooms. Unpublished dissertation, Stanford University, Stanford, CA.

#### SELECTED PRESENTATIONS

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Hand, V. (2009). Managing Status as an Entrée to Teaching for Equity to be presented at the 2009 American Educational Research Association Conference, 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, Bannister, Battey, Hand & Spencer. (2007). Theorizing Race and Power in Mathematics Education. Paper presented at the 2007 American Educational Research Association Conference, Chicago, Illinois.

Brewley-Corbin, Hand & Aguierre. (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. (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

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*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, Reviewer*

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