

Victoria M. Hand

victoria.hand@colorado.edu

office: (303) 492-7738

University of Colorado-Boulder
School of Education, 249 UCB
Boulder, CO 80309

EDUCATION

Ph.D., Educational Psychology, emphasis in Mathematics Education

Stanford University, 2003

M.A., Learning, Design, and Technology

Stanford University, 1998

B.A., Quantitative Economics and Decision Sciences

University of California, San Diego, 1989

CURRENT APPOINTMENT

Associate Professor, Curriculum and Instruction, Math Education, University of Colorado, Boulder, 2014– present

PREVIOUS APPOINTMENTS

Assistant Professor, Curriculum and Instruction, Math Education, University of Colorado, Boulder, 2007– 2014

Assistant Professor, Curriculum and Instruction, Math Education, University of Wisconsin, Madison, 2005 –2007

Assistant Professor/Post-doctoral Research Associate, “Diversity in Mathematics Education (DiME)” NSF Center for Teaching and Learning. Principal Investigators: Alan Schoenfeld, UC Berkeley, Thomas Carpenter, UW-Madison, and Megan Franke, UCLA, 2003-2009

Research Assistant, “Cases of equitable mathematics teaching” Principal Investigator: Jo Boaler, Stanford University, CA, 2003

Research Assistant, “Construction of mathematical identities in middle school”, Principal Investigator: James Greeno, Stanford University, CA, 2002-2003

Research Assistant, “On the court and in the classroom: mathematical identities of basketball players”, Principal Investigator: Na’ilah Nasir, Stanford University, CA, 2001-2003

Research Assistant, "Stanford University mathematics teaching and learning study", Principal Investigator: Jo Boaler, Stanford University, CA, 1999-2001

AWARDS

Provost’s Faculty Achievement Award, University of Colorado, Boulder, 2013

Division G Henry T. Trueba Award for Research Leading to the Transformation of the Social Contexts of Education, (Awarded to the Diversity in Mathematics Education (DiME) center), AERA, 2013

Chancellor’s Award for Excellence in STEM Education, University of Colorado, Boulder, 2011

Vilas Award, University of Wisconsin-Madison, 2006

FUNDED RESEARCH

Herbel-Eisenmann, B., Foote, M., **Hand, V.**, Wager, A., (\$2.5M; August, 2014 – September, 2017). *Agency, Access and Allies in Mathematical Systems*. Designing, facilitating and studying professional development to support equitable mathematical systems. Involves two-week teacher institute focused on grades 4-8 mathematics and CCSM mathematical practices, with respect to issues of power and oppression for students from less-dominant racial, ethnic and linguistic backgrounds. Followed by one year of action research (AR) and one year of design-based implementation research (DBIR), in which researchers focus on

features of agency, access and allies from the perspective of three components in the system (students, teachers and mathematics teacher educators).

- Hand, V. & van Es, B. (\$40,000; August 2012- current). *Teacher noticing for equitable mathematics instruction*. Researching the noticing practices of secondary mathematics teachers. Teachers nominated by district leaders for success in reaching a broad range of learners. Observed and videotaped teachers' classrooms and conducted noticing interviews with them around video clips from their classrooms and professional videos of classroom teaching. Spencer Foundation.
- Hand, V. (\$24,000; January 2010-September 2012). *Imagined trajectories for underrepresented high school students*. Designed and researched a mentoring opportunity for high school sophomores from underrepresented backgrounds, who excelled in mathematics and science. Students mentored middle school students engaged in innovative, inquiry-based STEM activities. Findings point to the role of design opportunities for learning in shaping students' lived narratives around STEM learning, equity and achievement. CU STEM Excellence, Women Investing in the School of Education (WISE) grants, and CU Office of Diversity and Excellence.
- Hand, V. (\$10,000; September 2006-June 2007). *Teaching mathematics for equity*. Designed and led a professional development working group of researchers and teachers that analyzed perspectives on and tools for equity in mathematics education, including: culturally relevant pedagogy, Complex Instruction, funds-of-knowledge, and teaching for social justice. Classroom design experiments also conducted. Findings presented at conferences and in a book chapter. NSF-Diversity in Mathematics Education.
- Saxe, G. & Hand, V. (\$15,000; June 2005-September 2006). *Opportunities to learn in middle school mathematics classrooms*. 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, in a handbook chapter, and in a journal article. AERA/IES.

COURSES TAUGHT

Adolescent Learning and Development, University of Colorado-Boulder

Knowing and Learning Mathematics and Science, University of Colorado-Boulder

Elementary Mathematics Methods, University of Colorado-Boulder and other universities

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

Methods for the Study of Equitable Mathematics Education, University of California at Berkeley

PUBLICATIONS, PRESENTATIONS AND WORKS UNDER REVIEW

Peer-reviewed journal articles

- Hand, V., Kirtley, K., & Matassa, M. (in press). Narrowing participation gaps in mathematics classrooms. Submitted to *Mathematics Teacher*.
- Hand, V. & Goffney, I. M. (2013). "All for one and one for all": negotiating solidarity around power and oppression in mathematics education. *Journal for Urban Mathematics Education*, 6(1), 28-34.
- Hand, V., Penuel, W., Gutiérrez, K. (2012). (Re)framing educational possibility: attending to power and equity in shaping access to and within learning opportunities. *Human Development*, 55, 250-268.
- Hand, V. (2012). Seeing power and culture in mathematics learning: teacher noticing for equitable mathematics instruction. *Educational Studies in Mathematics*, 80(1), 233-247.
- 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.

Articles under review

- Hand, V. (under review). "Do you know the mistake people make?": reframing what it means to learn mathematics. Submitted to *Cognition and Instruction*.
- Hand, V. & Gresalfi, M. (under review). The joint accomplishment of identity. *Educational Psychologist*.

Book chapters

- Spencer, J., & Hand, V. (in press). The racialization of mathematics education. *The Race Controversy in American Education*. Santa Barbara, CA: Praeger.
- Hand, V. (2014). "Taking up our space": becoming competent learners in the mathematics classroom. In N. Nasir, N. Louie, C. Cabana, B. Shreve & E. Woodbury (Eds.), *Mathematics for Equity: A Framework for Successful Practice*. New York, NY: Teachers College Press.
- 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.

Book reviews

- Hand, V. & Meaney, T. (2014). Rousing mathematics classroom discourse out of the ice age: Beth Herbel-Eisenmann, B.; Choppin, J.; Wagner, D.; Pimm, D. (Eds.) (2013) *Equity in Discourse for Mathematics Education: Theories, Practices, and Policies. Journal for Research in Mathematics Education.*
- Hand, V. (2011). Adding depth to portraits of mathematics inquiry: Karin Brodie (2010) *Teaching Mathematical Reasoning in Secondary Schools. Educational Studies in Mathematics. 79(1), 149-155.*

Peer-reviewed conference proceedings

- van Es, E. A., Hand, V., Mercado, J. (2014, June). Using Video to Collaboratively Examine Equitable Secondary Mathematics Teaching. In I. Horn (Chair), *Teachers' Learning about Equitable Practice through Talk with Colleagues.* Symposium presentation at the International Conference of the Learning Sciences, Boulder, CO.
- Hand, V., Zavala, M. & Harris, L. (2013). Constructing narratives around STEM achievement and motivation among learners from non-dominant backgrounds. *Published in the Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME).* Chicago, Illinois.
- Hand, V., DeAnda, P., Williams, C. (2007). "What counts as mathematical activity and who decides?": the Discourse of mathematics in mathematics education. In Lamberg, T. & Wiest, L.R. (Eds). *The Proceedings of the 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME)*, (pp. 665-671). NV: University of Nevada, Reno
- 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. In Alatorre, S., Cortina, J.L., Sáiz, M., and Méndez, A. (Eds). *The Proceedings of the 28th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME)*, (pp. 481-487). Mérida, Mexico: Universidad.
- Gresalfi, M. S., Hand, V. & Hodge, L. (2006). Creating opportunities for all: unpacking equitable practices in mathematics classrooms. In Alatorre, S., Cortina, J.L., Sáiz, M., and Méndez, A. (Eds). *The Proceedings of the 28th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME)*, (pp. 515-518). Mérida, Mexico: Universidad.
- Hand, V. (2004). Meaningful mathematical activity: opportunities for linking in diverse mathematics classrooms. In McDougall & Ross, J. (Eds). *The Proceedings of the 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME)*, (pp. 791-799). Toronto, Ontario: Ontario Institute for Studies in Education
- Hand, V. (2002). Constructing mathematical competence: students as authors. In P. Bell, R. J. Stevens & T. Satwicz (Eds.), *Keeping learning complex: The Proceedings of the Fifth International Conference of the Learning Sciences (ICLS).* Mahwah, NJ: Erlbaum.

Selected Conference Presentations

- van Es., B., Hand, V. Mercado, J., C'deBaca, C., Orsmeth, T., & Quiroz, R. (2014) Noticing for equitable mathematics instruction. Paper presented at the 2014 Association of Mathematics Teacher Educators (AMTE) Conference, Irvine, CA.
- Hand, V. (2013). *Noticing in equitable mathematics instruction.* Paper presented in Symposium at the 2013 American Educational Research Association Conference, San Francisco, CA.
- Hand, V. (2013). *Narrowing participation gaps in mathematics classrooms.* Paper presented in Symposium at the 2012 American Educational Research Association Conference, San Francisco, CA.
- Hand, V. & Barr, S. (2012). *Taking up space in the mathematics classroom: developing practice-linked identities.* Paper presented in Symposium at the 2012 National Council of Teachers of Mathematics Conference.

- Hand, V. (2012). *Dispositions of mathematics teachers towards culture, power and mathematics learning*. Paper presented at the 1st Mathematics Education and Contemporary Theory Conference, Manchester, UK.
- Hand, V., Penuel, W., Gutiérrez, K. (2012). *Re-framing as a means of re-locating opportunities to learn in multilevel educational systems*. Paper presented in Symposium at the 2012 American Educational Research Association Conference, Vancouver, B.C.
- Hand, V. & Harris, L. (2012). *Re-framing the achievement gap in STEM education*. Professional Development Seminar held at the Teachers of Colors and Allies Summit, Boulder, Colorado.
- Hand, V. & Barr, S. (2011). *"You, us, them": (re)framing the system of mathematics education in classroom mathematical discourse*. Paper presented in Symposium at the 2011 American Educational Research Association Conference, New Orleans, Louisiana.
- Hand, V. & Harris, L. (2011). *Mathematics teacher preparation and perspectives on the relations between culture, power and mathematics learning*. Paper presented at the 2011 National Council of Mathematics Teachers, Indianapolis, Indiana.
- 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. (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). *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.
- 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.

Works in progress

- Hand, V. (in progress). A situative perspective on equity in mathematics learning. To be submitted to the *Journal for Research in Mathematics Education*

Invited talks

- Hand, V. (2014). *TBD*. Invited Presentation. Strand on Equity, Culture and Social Justice, National Council for Teachers of Mathematics (NCTM) Regional Conference, Houston, Texas.
- Hand, V. (2012). *A sociocultural perspective on knowing and learning in STEM*. Invited presentation. UTeach National Conference, Houston, Texas.

- Hand, V. (2011). *We are what we teach*. Invited presentation, UTeach National Conference, Houston, Texas.
- Hand, V. (2011). *You, me, them: (re)framing the system of mathematics education in classroom mathematical discourse*. Invited talk, College of Education, University of Maryland.
- Hand, V. (2007). *The participation gap: creating equitable opportunities to learn in K12 mathematics classrooms*. Invited presentation, Wisconsin Department of Public Instruction, Madison, Wisconsin.
- Hand, V. (2005). *Constructing resistance: the role of students' cultural practices in creating opportunities for resistance to mathematics learning*. Invited presentation, Center for Teaching and Learning Meeting, Washington, D.C.

SERVICE

International/National

- Chair, Awards Committee, Research in Mathematics Education SIG, American Educational Research Association (AERA)
- Committee Member, Research Related to Practice Award, AERA
- Committee Member, Appointment of Division G Secretary, AERA
- Conference Reviewer, AERA, Divisions C&G, SIG-RME
- Conference Reviewer, International Conference of the Learning Sciences
- Conference Reviewer, National Council of Teachers of Mathematics
- Conference Reviewer, Psychology of Mathematics Education-North America Chapter
- Co-chair, Special Events, International Conference of the Learning Sciences
- Reviewer, American Educational Research Journal
- Reviewer, Canadian Journal for Science, Mathematics, and Technology Education
- Reviewer, Curriculum and Instruction
- Reviewer, Educational Studies in Mathematics
- Reviewer, Human Development
- Reviewer, Journal of Teacher Education
- Reviewer, Journal of Research in Mathematics Education
- Reviewer, Journal for Mathematics Teacher Education
- Reviewer, Journal of the Learning Sciences
- Reviewer, Journal of Teacher Education
- Reviewer, Mathematical Thinking and Learning
- Grant Reviewer, DR K-12, National Science Foundation
- Grant Reviewer, FIRE, National Science Foundation
- Grant Reviewer, TUES, National Science Foundation

University

- Co-Chair, Special Events, International Conference of the Learning Sciences, 2014
- Member, Campus Ethics Committee, Faculty Board, 2008-2013
- Member, Miramontes Selection Committee, 2009-2012
- Member, School of Education Climate Committee, 2012-current
- Member, Learning Science Design Space Committee, 2011-2012
- Member, Learning Sciences Search Committee, 2011
- Member, Science Explorers Search Committee, 2012