

## Joi A. Spencer, PhD.

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Department of Learning and Teaching

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### ACADEMIC BACKGROUND

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**Fall 2012-  
Present**      **Associate Professor, School of Leadership and Education Sciences**

Assistant Professor, School of Leadership and Education Sciences, University of San Diego, San Diego, CA

**Fall 2006-  
2012**

**Areas of focus:** Mathematics Education, school equity and African American student identity and achievement, lesson study

**2006**

Ph.D., Mathematics Education. University of California, Los Angeles

**Dissertation:** “Balancing the Equation: African American Student’s Opportunities to Learn Mathematics with Understanding in two Central-City Middle Schools”

**Areas of focus:** Access to rigorous mathematics for African American students, algebraic thinking in elementary and middle school students, student academic identity, cognitive and socio-cultural approaches to teaching mathematics, and school equity.

**Committee members:** Megan Franke- Chair, Jeannie Oakes, Frederick Erickson, Danny Martin and Jim Stigler (Defended March, 2006)

**1999**

M.A., Education (Language Learning and Policy). Stanford University

**Areas of focus:** linguistic and communicative norms of African American Vernacular English, educational implications of second dialect speakers and second language acquisition.

**Committee members:** John Baugh and Kenji Hakuta

**1994**

**B.A., African and Afro-American Studies, Stanford University. Degree conferred with honors in Education.**

**Areas of focus:** Reconstruction, early African American school development, social, cultural and educational implications of desegregation and urban school reform

### PROFESSIONAL AND RESEARCH EXPERIENCE

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**NASA Ames Pre-Service Teacher & Alumni Institute, Mathematics Instructor, Summer 2012 & 2013 Mountain View, CA.**

Provided instruction on learner-centered & inquiry-based mathematics to pre-service and practicing teachers on the NASA Ames Research campus. Lessons incorporated NASA STEM curriculum related to rocketry, solar energy, and space travel.

**Research Associate, LessonLab Research Institute, Santa Monica, CA, 2003-2008**

Implemented experimental research study of middle school mathematics teachers in Los Angeles Unified School District. Study development of teacher content and pedagogical content knowledge and the impact of this knowledge on the teaching of rich mathematical problems in the classroom. Served as professional development facilitator for teachers participating in the study.

**Educational Researcher, Rand Corporation, Santa Monica, CA, 2002-2005**

As member of research team, developed an instrument for measuring mathematics and science instruction with a two-state research team. Responsibilities included conducting classroom observations, and scoring classroom artifact packages.

**Teaching Assistant, University of California, Los Angeles, Winter 2004**

Prepared lessons and ran section of 30+ pre-service teachers. Topics included Cognitively Guided Instruction, curriculum development, and theories of teaching and learning mathematics.

**Director, Gear-Up Math & Science Summer Academy, University of California, Los Angeles, Summer 2002 & 2003**

Developed and directed middle school math & science program for 40 African American and Latino, low-income middle school students. Researched and developed curriculum focused on student mathematical understanding, conducted staff development and training, supported and monitored student progress.

**Graduate Student Researcher, Algebraic Thinking, University of California, Los Angeles Spring 2002-Spring 2004**

Served as a graduate student researcher in the study, Algebraic Thinking as a Tool for improving Mathematics Achievement. Conducted mathematics interviews with elementary school students on their algebraic thinking and reasoning. Research from this study was published in Carpenter, T. Franke, M & Levi, L. (2003). *Thinking Mathematically: Integrating Arithmetic & Algebra in Elementary School*. Heinemann.

**Teaching Assistant, Stanford University, Introduction to African and Afro American Studies (Writing Intensive), Winter 1999.**

Assisted professor in teaching and administrative duties. Graded papers and examinations, served as a writing tutor, presented lectures and organized guest lectures.

**Project Evaluator, Service Learning 2000, Palo Alto, CA, September 1997-June 1998**

Conducted independent evaluation of youth organization providing community service and service learning opportunities to middle and high school students

**Project Evaluator, Youth Community Service, Palo Alto, CA, Summer 1998**

Conducted independent evaluation of summer youth-programs aimed at providing middle school students with community service opportunities. Evaluation included interviews, observations and data analysis.

**Middle School Mathematics Teacher, Cesar Chavez Academy, East Palo Alto, CA, 1995-1998**

Full-time 8<sup>th</sup> grade math teacher in an urban middle school. Implemented interactive mathematics curriculum. Tailored instruction to the needs of English as a 2<sup>nd</sup> language students and African American students.

**Elementary Teacher, Menlo Oaks Middle School, East Palo, CA, 1994-1995**

Full-time 5<sup>th</sup> grade teacher in a self contained classroom. Implemented all areas of the curriculum including mathematics, English for second language students, science and social studies.

### **COURSES TAUGHT AT UNIVERSITY OF SAN DIEGO**

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The Historical Struggle for Educational Equity (EDUC 597)	Spring 2012
Independent Study Course in Ghana	Winter Intercession 2012
Secondary Mathematics Methods (EDUC 332/532)	Fall 2008, 2009 & Fall 2012
Advanced Seminar in Math Content (EDUC 573)	Fall 2006, Summer 2007, Fall 2008, Fall 2009 & Fall 2011
Research Methods (EDUC 500)	Spring 2007 & Fall 2010
Masters Capstone Seminar (EDUC 580)	Spring 2007, Spring 2008 & Spring 2009; Fall 2009, Spring 2010, Spring 2011, & Spring 2012 (In progress)
Current Issues in Math, Science, and Technology (EDUC 570)	Spring 2009
Educational Leadership for Peace & Sustainability	Summer, 2008
Student Movements (EDUC 379)	Fall 2010, 2011 & 2012

### **GRANTS, FELLOWSHIPS AND AWARDS**

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University of San Diego, School of Leadership and Education Sciences, Department Faculty of the Year Award, 2013

Greater San Diego Mathematics Council, Outstanding Post-Secondary Mathematics Teacher, 2011

Center for Educational Excellence (CEE) Travel Grant, \$1500, supporting travel for presentation at the Free Minds Free People Education Conference, Providence, RI. June 2011.

International Opportunity Travel Grant, \$1200, supporting travel for presentation at International Symposium CADIVAM Lausanne. Lausanne, Switzerland. May 2011.

Page, E., Spencer, J., Friedman, J. & Kua, J. (2009). Noyce Scholars Program, National Science Foundation, \$900,000. Funded August, 2009.

NSF REESE Collaborative Research Grant: "Integrating mathematics and equity – Toward a new model for the professional development of effective mathematics teachers" (\$45,000), submitted January 2007 (not funded)

American Educational Research Association (AERA) Dissertation Year Grant, \$15,000

Doctoral Student Fellow, Diversity in Mathematics Education Center for Learning and Teaching, University of California, Los Angeles. \$20,000/year Fall 2002 – Spring 2005

Eugene Cota Robles Fellowship for doctoral study, \$20,000/yr., Fall 2001- Spring 2005

#### **Faculty Research Grants**

Spring 2011    Understanding Multiplicative Reasoning in Struggling Middle School Math Students

- Spring 2010    The Impact of Teacher Disposition on Mathematics Instructional Practice
- Spring 2008    African American Middle School Student Success & Struggle in Mathematics

## PUBLICATIONS

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- Stinson, D. W., & Spencer, J. (Eds.). (2013). Privilege and Oppression in the Mathematics Preparation of Teacher Educators [Special issue]. *Journal of Urban Mathematics Education*, 6(1).
- Spencer, J. (2013). Views from the Black of the Math Class. In *Public Education Under Siege*. Michael Katz & M. Rose, Eds. Philadelphia, PA: University of Pennsylvania Press.
- Spencer, J. (2013). The mathematical practices of those without power. In M. Berger, K. Brodie, V. Frith, & K. le Roux (Eds.) *Proceedings of the Seventh International Mathematics Education and Society (MES 7)*. Cape Town, South Africa.
- Spencer, J. (2012). Views from the Black of the Math Class. *Dissent*. Winter 2012. [www.dissentmagazine.org](http://www.dissentmagazine.org).
- Quezada, R., Lattimer, H. & Spencer, J. (2011). Opportunities and Obstacles in Action Research as a Pathway to Developing as a Practitioner Researcher. In Saleh, I. & M.S. Khine (Eds.) *Practitioner Research in Teacher Education: Theory and Best Practices* (Peter Lang International).
- Spencer, J., Santagata, R. & Park, J. (2010). Keeping the mathematics on the table in urban, mathematics professional development: A Model that integrates dispositions towards students. In M. Q. Foote (Ed.) *Mathematics teaching and learning in K-12: Equity and professional development*. New York: Palgrave.
- Hubbard, L. & Spencer, J. (2009). Achieving equity through charter schools: More than tinkering at school structure. *Perspectives in Education*. 27(4), 395-405.
- Spencer, J. (2009). Identity at the Crossroads: Understanding the Practices and Forces that Shape African American Success and Struggle in Mathematics. In D.B. Martin (Ed.) *Mathematics Teaching, Learning, and Liberation in African American Contexts*. New York: Routledge.
- Ullucci, K. & Spencer, J. (2009). Unraveling the myths of accountability: A Case study of the California High School Exit Exam. *Urban Review*. 41(2), 161-173.
- Spencer, J. (2008). *Study Guide to the MisEducation of the Negro*. Washington, DC: Association for the Study of African American Life and History.
- Frederick Erickson with Rishi Bagrodia, Alison Cook-Sather, Manuel Espinoza, Susan Jurow, Jeffrey J. Shultz, and Joi Spencer. (2008). Students' Experience of School Curriculum: The Everyday Circumstances of Granting and Withholding Assent To Learn. In F. M. Connelly, M. F. He & JoAnn Phillion (Eds.) *Handbook of Curriculum and Instruction*. Sage Publications.
- \*Diversity in Mathematics Education (2007). Prioritizing inequity in mathematics education. In F. Lester (Ed.) *Handbook of Research on Mathematics Teaching and Learning*. New York, NY: National Council of Teachers in Mathematics.

\*one of five editors/writers on the chapter

Bannister, V., Bartell, T., Battey, D., Hand, V. & Spencer, J. (November, 2006). Inequity in mathematics education: Moving beyond individual-level explanations of differential mathematics achievement to account for race and power. In S. Alatorre, J.L. Cortina, M. Saiz, & A. Mendez (Eds.), *Proceedings of the twenty- eighth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Merida, Yucatan, Mexico.

Borko, H., Stecher, B., Martinez, F., Kuffner, K., Barnes, D., Arnold, S., Spencer, J. & Creighton, L. (2006). *Using Classroom Artifacts to Measure Instructional Practice in Middle School Science: A Two-state field test*. National Center for Research on Evaluation, Standards, and Student Testing (CRESST) Center for the Study of Evaluation (CSE) Report 690.

Spencer, J. (2006). *Balancing the equation: African American students' opportunity to learn mathematics with understanding in two central city middle schools*. Doctoral dissertation, University of California, Los Angeles.

Spencer, J. (Spring, 2002). Radical Equations: The Civil Rights of Algebra Instruction. *Teaching to Change L.A.* Online Journal. Book Review.

## **MANUSCRIPTS UNDER REVIEW & IN PROGRESS**

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Spencer, J. (2012). Impediments to Teaching for Understanding: A Case Study of Urban Teachers' Implementation of Rich Mathematics Problems. *Educational Studies in Mathematics*.

Spencer, J. (In Progress). Cognitively Guided Instruction as a Pathway to Success for Struggling Middle School Mathematics Learners: A Pilot Study.

Spencer, J. & Ouedraogo- Thomas, R. (In Progress). Black Student Retention Efforts Through a New Course Initiative- Engaging Students in the Struggle for Educational Equity.

Spencer, J., Molina, S., Manasee, M. & Alexandrowicz, V. (In Progress). Mentor texts Squared in the Adult ESL Classroom.

## **NATIONAL & INTERNATIONAL CONFERENCE PRESENTATIONS (PEER REVIEWED)**

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2012            Spencer, J. (July, 2012). Impediments to and Prospects for Acquiring Millennial Skills in Low cost Ghanaian Academies. International Council on Education for Teaching (ICET) World Assembly, Cape Coast, Ghana.

2011            Spencer, J. Ullucci, K., & Renee, M. (2011). Social Justice Mathematics Education in the Time of Standards. Free Minds Free People Conference. Providence, RI. June, 2011.

2011            Spencer, J. (2011). Identity, Opportunity & Disposition: The Learning Experiences of African American Middle School Mathematics Students. Institute for the Study of the African American Child, Conference on Research Directions. Hilton Head, SC. May 2011.

- 2011 Spencer, J., Santagata, R. & Park, J. (2011). Design Principles for Using Video as a Tool for Engaging Teachers in Equity Based Discussions about Mathematics Teaching and Learning. International Symposium CADIVAM Lausanne. Lausanne, Switzerland. May, 2011.
- 2011 Spencer, J. (2011). Ethnic Identity as a Tool for Mitigating Racism in Middle School Mathematics Learning Opportunities. Presented in Symposium at the Annual Meeting of the American Educational Research Association (AERA). New Orleans, LA. April, 2011.
- 2010 Spencer, J. (2010). Professional Development as a Tool for Building Culturally Responsive Education: Lessons from a Middle School. Presented in Symposium at the Annual Meeting of the American Educational Research Association (AERA). Denver, CO. April, 2010.
- 2009 Spencer, J. (2009). Impediments to Teaching Mathematics for Understanding. Paper presented at the California Mathematics Council- North Conference. Pacific Grove, CA. December, 2009.
- 2009 Santagata, R., Spencer, J. & Park, J. (2009). Teaching Mathematics for Understanding in Urban Settings: A Model that Integrates Knowledge, Skills, and Dispositions Toward Students. Presented in symposium at the Annual Meeting of the American Educational Research Association (AERA). San Diego, CA.
- 2009 Spencer, J. (2009). Mathematics Tracking Policies and the Construction of Educational Opportunity and Achievement. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). San Diego, CA.
- 2008 Spencer, J. (November, 2008). Mathematics Discourse Practices in an Urban Charter School. Paper presented at the 2008 Meeting of the American Anthropological Association (AAA). San Francisco, CA.
- 2008 Spencer, J. (September, 2008). Examining a Charter School Through a Socio-cultural Lens. Paper presented at the International Society for Cultural and Activity Research Conference (ISCAR). San Diego, CA.
- 2008 Spencer, J. (April, 2008). Social Justice in the Mathematics Classroom: Powerful Lessons for Today's Realities. Paper presented at the 2008 Radical Mathematics Conference. New York, NY.
- 2008 Spencer, J. (March, 2008). Foregrounding Issues of Equity and Diversity in Mathematics Education Research: Implications for Research Methods and Teacher Development. Professional Development Course taught at the 2008 annual meeting of the American Educational Research Association (AERA). New York, NY.
- 2008 Spencer, J. (March, 2008). Identity at the Crossroads: African American Mathematics Students Discuss Who They Are and Who They Hope to Be. Paper presented in symposium at the 2008 annual meeting of the American Educational Research Association (AERA). New York, NY.
- 2008 Spencer, J., Ullucci, K. & Goode, J. (February, 2008). Talking Race with White Pre-

Service Teachers: Ideas for the University Classroom. Association of Teacher Educators (ATE). New Orleans, LA.

- 2007 Spencer, J. (June, 2007). The Elevator Problem: Urban School Teachers' Impediments to Teaching a Rich Mathematics Lesson. Poster presented at the Institute of Education Sciences Research Conference (IES). Washington D.C.
- 2007 Bannister, V., Bartell, T.G., Battey, D., Hand, V., & Spencer, J. (April, 2007). Critiquing the stories, roles, and structures in mathematics education that privilege whiteness. Paper presented at the 2007 annual meeting of the American Educational Research Association (AERA), Chicago, IL.
- 2006 Bannister Pitts, V., Bartell, T., Battey, D., Hand, V. & Spencer, J. (April, 2006). The Untapped Potential of Mathematics Education Research to Address Equity. Paper presented at the 2006 annual research pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. St. Louis, MO.
- 2006 Goode, J., Spencer, J. and Ullucci, K. (January, 2006). Making Meaning of Identity: A View through Three Lenses. Paper presented at the 75<sup>th</sup> Annual Hawaii International Conference on Education. Honolulu, Hawaii.

## INVITED TALKS

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- 2012 Mathematical Teaching, Mathematical Tasks & the Kinetic Power of STEAM, Lead San Diego, November 2012.
- 2011 Spencer, J. (2011). Mathematics Education Research as a Site for Social Justice. Middle Tennessee State University. Research Address to the Inaugural Mathematics and Science Education Doctoral Cohort. April 2011.
- 2011 Spencer, J. (2011). Keynote Address. Why are All the Students of Color Sitting at the Back of the Math Classroom: Teaching Mathematics for Freedom and Opportunity. Greater San Diego Mathematics Council. February, 2011.
- 2010 Spencer, J. (2010). Keynote Address. Mathematics Education Researchers: Taking a Stand to Keep our Seat in the School Room. Radical Mathematics Conference. Long Island University. Brooklyn, NY.
- 2009 Franke, M. L., Spencer, J., & Terry, C. L. (2009, April). Narratives from the Field: Mathematics Teacher Disposition Towards African American Middle School Students. In M. Franke (Chair): Identity, Equity, and Professional Development: Supporting Learning. Invited plenary session lecture given at the research pre-session meeting of the National Council of Teachers of Mathematics. Washington, D. C.
- 2009 Spencer, J. (2009) Implications from Research on Instructional Practice in Today's Mathematics Classrooms. National Center for Women and Information Technology (NCWIT). Menlo Park, CA.
- 2009 Spencer, J. (2009). Teaching Mathematics for Understanding in Urban Settings: A Model

that Integrates Knowledge, Skills, and Dispositions towards Students. Center for Research in Math and Science Education (CRMSE). San Diego State University. San Diego, CA.

- 2008 Spencer, J. (November, 2008). Making Mathematics Real through Woodson's MisEducation of the Negro. International Conference of the National Association for Multicultural Education (NAME). New Orleans, LA.
- 2008 Spencer, J. (July, 2008). The MisEducation of the Negro: A Study Guide. Presented at the 1<sup>st</sup> Annual Summer Institute of the National Association for Multicultural Education. Philadelphia, PA.
- 2008 Spencer, J. (2008). African American Mathematics Identity in Central City Schools. Urban Learning, Teaching and Research Special Interest Group of the American Educational Research Association. Presented at the 2008 Annual meeting of the American Educational Research Association. New York, NY.
- 2007 Spencer, J. (2007). Framing failure in The Mathematics Classroom: A 2-School Case Study Of African-American Math Achievement. California Mathematics Council South Annual Conference. Palm Springs, CA.
- 2006 Spencer, J. (2006). Math Education: Breaking Through Barriers Towards Excellence. National Council for Black Studies Annual Conference. San Diego, CA.
- 2006 Spencer, J. (2006). Improving African American Student Academic and Mathematics Identity. San Bernardino County Institute on Educating African American Students. San Bernardino, CA.

### **Professional Memberships**

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American Educational Research Association (AERA)

- Divisions K & G
- Special Interest Groups:
  - Research in Mathematics Education
  - Research Focus on Black Education

National Council of Teachers of Mathematics (NCTM)

Association of Mathematics Teacher Educators (AMTE)

California Association of Mathematics Teacher Educators (CAMTE)

California Mathematics Council (CMC)

Greater San Diego Mathematics Council (GSDMC)

Benjamin Banneker Association

Institute for the Study of the African American Child

*References Available Upon Request*