

Jacqueline J. Sack

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Education	2002-2005 Ed. D. Curriculum and Instruction, emphasis in Mathematics Education Dissertation: <i>Paths toward mathematics teachers' empowerment: A narrative surrounding high school reform.</i>	University of Houston, TX.
	1980-1984 M. L. S. Major in Library Science	Sam Houston State University, Huntsville, TX.
	1971-1975 B. Sc. Honours Majors: Mathematics and Chemistry	University of the Witwatersrand, South Africa.
Accreditations	Texas Secondary Mathematics Teacher Certification, 6 – 12 Texas Master Mathematics Teacher Certification, 8 – 12	
Professional Experience	July, 2006-Present Assistant Clinical Professor of Mathematics Weiss School of Natural Sciences, Rice University Associate Director for Curriculum Development Rice University School Mathematics Project, Houston, TX Develop research-into-practice programs for the Mathematics Project. Provide development and support for teacher-leaders and teachers in the enactment of programs. Prepare proposals and reports to funders. Disseminate findings to the greater education community through professional conferences and publications. Course instructor: Geometry for Elementary School Teachers (2003, 2004, 2005, 2006, 2007) Geometry for Middle School Teachers (2002, 2003, 2006) Topics in Algebra (2007) Classroom Management (Graduate course CUIN6375, University of Houston, College of Education), Fall, 2007	
	January, 2005-Present Mathematics Leadership Institute Program Manager Rice University School Mathematics Project, Houston, TX Five-year, \$3.8 million NSF MSP grant to develop and support 80 lead high school mathematics teachers in 40 high schools.	
	Secondary Mathematics Specialist Support for mathematics programs in district high schools and authorship of high school Geometry benchmark assessments.	Curriculum Department, Houston I.S.D., TX.
	June, 2003-December, 2004 Model Lesson Writer Developed and wrote Geometry Model Lessons, a standards-based, replacement program for all students in 10 th grade geometry.	Curriculum Department, Houston I.S.D., TX

January, 2004-May, 2004

Project Manager and Writer Rice University School Mathematics Project, Houston, TX
Geometry Module, Texas Higher Education Coordinating Board, Teacher Quality Type A
Grant (\$296,133).

Conceptualized, and managed the writing of a geometry program to develop quality high
school teachers in higher-education institutions throughout the state.

1993-2003

Lanier Middle School, Houston I.S.D., TX.

Department Co-Chair (1998-2002)

Mathematics Teacher

Courses taught:

Geometry Pre-AP/GT, Algebra 1 Pre-AP/GT, Pre-Algebra Pre-AP/GT, Math 8 Regular

1992-1993

St. John's School, San Juan, Puerto Rico.

Mathematics Teacher

Courses taught:

Algebra 1, Pre-Algebra, Math 7

1985-1992

Hebrew Academy, Houston, TX.

Teacher / Information Specialist

Algebra 1, Geometry, Algebra 2

Chemistry, Physical Science, Earth Science

1983-1985

M.W. Kellogg, Houston, TX.

Information Specialist

Provided library and information services to researchers in an engineering research facility.

1976-1983

Development Chemist

Formulated and produced a variety of personal care products in the detergent and
cosmetics industries.

Professional Activities

Publications

- Sack, J. J. & van Niekerk, R. (in press, ca 2009). Developing the spatial operational
capacity of young children using wooden cubes and dynamic simulation software.
Seventy-first yearbook. NCTM, Reston, VA.
- Sack, J. J. (2008). Commonplace Intersections within a high school mathematics
leadership institute. *Journal of Teacher Education*, 59(2), 189-199.
- Sack, J. & Parr, R. (2008). *Instructional strategies for Discovering Geometry*. Emeryville,
CA: Key Curriculum Press Professional Development.
- Parr, R. & Sack, J. (2008). *Instructional strategies for Discovering Mathematics*.
Emeryville, CA: Key Curriculum Press Professional Development.
- Sack, J. & Vazquez, I. (2008). Three-dimensional visualization: Children's non-
conventional verbal representations. In Figueras, O., Cortina, J. L., Alatorre, S.,
Rojano, T., & Sepúlveda, A. (Eds.). *Proceedings of the Joint Meeting of PME32 and
PME-NA XXX. 4*. Mexico: Cinvestav-UMSNH, 217-224.
- Sack, J. J. (2006). Paths toward mathematics teachers' empowerment: A narrative
surrounding high school reform. *Dissertation Abstracts International*, 66(11), 3918.
(UMI No. AAT 3195965)
- Sack, J. J. (2004). *Shifting ways of knowing along the professional development road: A
professional developer's experience in a district-wide, top-down reform initiative*.
Unpublished manuscript, University of Houston, TX.
- Geometry teacher quality module*. (2004). Houston, TX: Rice University School Mathematics

Project.

TEXTEAMS High school geometry: Supporting the TEKS and TAKS. (2003). Austin, TX: Texas Education Agency.

TEXTEAMS Rethinking middle school mathematics: Geometry across the TEKS. (2003). Austin, TX: Texas Education Agency.

TEXTEAMS Geometry for all. (1998). Austin, TX: Texas Education Agency.

Conference Presentations

Joint Meeting of PME and PMENA XXX. *Three-dimensional visualization: Children's non-conventional verbal representations.* Morelia, Mexico, July 17-21, 2008.

Conference for the Advancement of Mathematics Teaching (CAMT), Dallas, TX, July 2008.

3-D visualization: Why? When? How?

Using TAKS stems to develop differentiated problem sets.

National Council of Teachers of Mathematics Annual Meeting, Salt Lake City, UT, April 10-12, 2008. *Build, draw, and interpret: 3-D visualization activities using Somas and cubes.*

National Council of Supervisors of Mathematics 40th Annual Conference, Salt Lake City, UT, April 7-9, 2008. *Developing and supporting high school mathematics lead teachers: Insights into a university/school-district leadership collaboration.*

Expanding Your Horizons Conference, Houston, TX, March 8, 2008. *3-D Visualization.*

2008 NSF Math and Science Partnership Learning Network Conference, Washington D.C., January 28-29, 2008. *The impact of the lead-teacher professional learning community within the Rice University Mathematics Leadership Institute.*

National Council of Teachers of Mathematics Regional Meeting, Houston, November 29-30, 2007. *Build it, draw it, interpret it.*

North American Chapter of the International Group for Psychology of Mathematics Education (PME-NA), 29th Annual Meeting, Lake Tahoe, Nevada, October 25-28, 2007. Short research paper: *Strengthening mathematics teachers' pedagogical content knowledge through collaborative investigations in combinatorics.*

National Council of Teachers of Mathematics Annual Meeting, Atlanta, March 23, 2007. *Build it, draw it, interpret it.*

Rice University School Mathematics Project Spring Networking Conference, February 24, 2007. Keynote address. *3-D: The foundation for developing geometric thinking.*

2007 NSF Math and Science Partnership Learning Network Conference, Washington D.C., January 26-27, 2007. *Bringing together professor, graduate student and teacher via challenging mathematics curricula.*

North American Chapter of the International Group for Psychology of Mathematics Education (PME-NA), 28th Annual Meeting, Mérida, Mexico, November 9-12, 2006. Poster presentation: *A view of high school mathematics curricula through the lens of Schwab's commonplaces.*

Texas Association for Supervisors of Mathematics (TASM) Fall Meeting, Sept. 18, 2006. Program presenter: *Lessons Learned Across the Nation; Developing Leaders at the Campus Level; The Struggle to Be Heard: Communication Through Assertion and Reflection.*

Conference for the Advancement of Mathematics Teaching (CAMT), Houston, TX, July 2006. *Instructional strategies that promote literacy in mathematics.*

Dana Research Center for Math and Science Education, University of Texas at Austin, Teacher Quality Grant Program, Meeting for Grant Awardees, Austin, March 27-28, 2006. Keynote address: *A framework for geometry, K – 12.*

Expanding Your Horizons Conference, Houston, TX, Feb. 26, 2006. *Using techniques from the Raw Recruits project to engage students in problem solving.*

Dana Center's 10th Annual October Mathematics Higher Education Conference, October 29-30,

2004. *Geometry Teacher Quality Module*.

Association for Mathematics Education of South Africa (AMESA) Tenth National Congress, July 1-4, 2004. *Approaches to filling the gaps and correcting misconceptions about the concept of area*.

Association for Mathematics Education of South Africa (AMESA) Tenth National Congress, July 1-4, 2004. *Raising the roof on 3-D visualization*.

Training of Trainers, *Geometry Teacher Quality Module*, May 12, 2004, Fort Worth, TX, and May 18-19, August 20, 2004, Houston, TX.

Conference for the Advancement of Mathematics Teaching (CAMT), Houston, TX, July 2003. *Giant Polyhedra, Inside and Out*.

Texas Association for the Gifted and Talented, Annual Conference, Houston, TX, November 2002. *MATHCOUNTS, A Problem-Solving Program*

Conference for the Advancement of Mathematics Teaching (CAMT), Houston, TX, July 2000. *The Platonic Solids, Inside and Out*.

Conference for the Advancement of Mathematics Teaching (CAMT), Houston, TX, July 2000. *Doubling the Tetrahedron – What Fills It?*

Conference for the Advancement of Mathematics Teaching (CAMT), Houston, TX, July 2000. *MATHCOUNTS – How to Implement the Program Effectively*.

Conference for the Advancement of Mathematics Teaching (CAMT), Houston, TX, July 1997. *MATHCOUNTS*.

International, National and Regional Presentations and Courses

Topics in Algebra. Academic-year course. Aldine ISD. Fall 2007. Instructor.

Classroom Management (CUIN 6375). University of Houston, College of Education. Fall, 2007. Lecturer.

Targeting Talent, Investing in Excellence, Facilitating Success (Grade 10 – Grade 12 Learners), University of the Witwatersrand, South Africa. July 3-6, 2007. Guest instructor.

Mathematics Leadership Institute Geometry and Leadership strands, Rice University Mathematics Leadership Summer Institute, Houston, June 9-July 2, 2008. Instructor.

Mathematics Leadership Institute Geometry and Leadership strands, Rice University Mathematics Leadership Summer Institute, Houston, June 4-28, 2007. Instructor.

Mathematics Leadership Institute Leadership strand, Rice University Mathematics Leadership Summer Institute, Houston, June 5-29, 2006. Instructor.

Using techniques from the Raw Recruits project to engage students in problem solving. Guest speaker for University of St. Thomas, Masters-level course: EDUC 5318, Middle School Methods, Feb. 22, 2006.

The Concept of Scale in the Senior High School Mathematics Classroom, Clear Creek ISD, January-March, 2006.

High School Geometry, Pearland ISD, August, 2005-January, 2006.

Geometry Workshop. Hirsch Lyons School, Johannesburg, South Africa. July 26, 2005

Mathematics Leadership Institute Geometry and Leadership strands, Rice University Mathematics Leadership Summer Institute, Houston, June 6-July 1, 2005.

Training of Trainers, *Geometry Module*, Mathematics Department, Louisiana State University, Baton Rouge, May 6-7, 2005.

Houston ISD Senior High School Principals Meeting, *Rice University NSF Mathematics Leadership Institute*, Houston, TX, February, 2005.

Geometry Module, Pasadena Independent School District High School Geometry Teachers Workshop, October 14, 2004; Middle School Teachers Workshop, October 20, 2004.

MORE Math Program for Teachers. *Informal Geometry from a Problem-Solving Approach*. Aldine Independent School District, TX, Summer, 2003.

HULINC (Houston Urban Systemic Initiative) Master Teacher:

Geometry for Elementary School Teachers (Fall 2002, Spring 2003, Fall 2003 (two

sections), Fall 2004).

Geometry for Middle School Teachers (Fall 2001, Spring 2003, Spring, 2006).

MATHCOUNTS: A Problem-Solving Resource. Harris County Department of Education, May, 2003.

MATHCOUNTS Coaches Workshops. San Antonio, September, 2002; San Antonio. July 2002; Houston. October 2002; Houston. September 2001; San Antonio. August 2001.

TEXTTEAMS, *Geometry for All*. Repeat presentations 1999-2001.

TEXTTEAMS, *Algebra 2000*. Repeat presentations 2001-2002.

Rice University School Mathematics Project, Fall and Spring Workshops:

Regular Polyhedra. Co-presenter, Simon Morgan, Oct., 2001.

Developing the Concept of Number in Grades 4 – 6, Sept., 1998.

Middle School: Exploring the Coordinate Plane. Co-presenter, Sharon Gordon, Oct., 1997.

Supervision

Manager and Presenter, Rice University Mathematics Leadership Institute, Summer, 2008.

3-D visualization instructional research project for 3rd and 4th grade after-school students. 2007-2008. Wharton Elementary School. Principal Investigator.

Manager and Presenter, Rice University Mathematics Leadership Institute, Summer, 2007.

Manager and Presenter, Rice University Mathematics Leadership Institute, Summer, 2006.

Manager and Presenter, Rice University Mathematics Leadership Institute, Summer, 2005.

Advanced Internship, University of Houston, College of Education. Co-instructor, CUIIN 6397: MORE Math Program for Teachers. *Informal Geometry from a Problem-Solving Approach*. Aldine Independent School District, TX, Summer, 2003.

Support Teacher, Urban Programs, Rice University School Mathematics Project.

Marshall Middle School, HISD, Summer, 1995.

Hamilton Middle School. HISD, Summer, 1996.

Hogg Middle School, HISD, Summer, 1997.

Sam Houston High School, HISD, Summer, 1998.

Burbank and Patrick Henry Middle Schools, HISD. Summer, 1999.

Carver High School. Aldine ISD, Summer, 2000.

Carver High School and Drew Academy, Aldine ISD, Summer, 2001.

Mentor of Teachers, Lanier Middle School, Houston Independent School District, 1995, 1998.

Critical Reviews

J. Sack [Presentation reviewer]. PME-NA, 2007.

J. Sack [Presentation reviewer]. PME-NA, 2006.

J. Sack et. al. [Reviewer]. A case of a high school English teacher's responsive curriculum planning submission. *Teacher Education and Practice*. Reviewed September 20, 2003.

J. Sack et. al. [Reviewer]. Reframing the practicum: Constructing performance space in initial teacher education. *Teaching and Teacher Education*. Reviewed February 26, 2004.

J. Sack et. al. [Reviewer]. Teacher classroom research: Reflections on a nation-wide experience in Iran. *Teachers and Teaching: Theory and Practice*. Reviewed March 3, 2004.

Web Design

Sack's Incredible Math Happenings. <<http://home.swbell.net/isack/>> provided up-to-date information for parents and students on homework assignments, goals, expectations, grading policy and helpful links.

Committee Membership

HISD Mathematics Science Task Force, August – September, 2005.

Advisory Board Member, Supporting Urban Science and Mathematics Educators (SUSME), University of Houston, May 2005 –

Special Campus Intervention Team (SCIT) approved by the Texas Education Agency (TEA) to provide recommendations for improvement for Kashmere High School, HISD, January 2005.

HISD Ad hoc committee on Literacy in the High Schools, 2004.

Regional MATHCOUNTS Committee Teacher Representative, 1996 – 2003. Established protocol for regional practice competitions with a focus on “success for all participants.” Hosted and facilitated practice competitions for over two-hundred students from the greater Houston area.

Faculty Advisory Committee Chairperson, 1995-1997. Lanier Middle School, Houston Independent School District.

Community Service

MATHCOUNTS Sponsor, 1993-2003. Lanier Middle School, Houston Independent School District. School teams qualified for state level competition every year, taking first place in 1997.

MATHCOUNTS Texas State Team Coach, 1997. State team placed 15th in the National MATHCOUNTS Competition, May 1997, Washington, DC.

Funded Grants

Polyhedral Triangles. September, 2000-March, 2001. Toshiba America Foundation funded the purchase of seventy-five custom-made equilateral triangles for a school-wide three-dimensional geometry project (\$5,000).

Professional memberships

National Council of Teachers of Mathematics

National Council of Supervisors of Mathematics

International Group for the Psychology of Mathematics Education (North American Chapter)

International Group for the Psychology of Mathematics Education

Houston Council of Teachers of Mathematics

Awards

1996 Houston Council of Teachers of Mathematics Middle School Mathematics Teacher of the Year

1998 Edyth May Sliffe Award (American Mathematics Competitions)