

## CURRICULUM VITAE

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### Education

1982 - 1985 The Ohio State University, Ph. D. Mathematics Education  
1976 - 1978 UNAM National University of Mexico, M. Sc. Mathematics  
1972 - 1976 UNAM National University of Mexico, B. Sc. Mathematics

**Fields of interest:** Mathematics Education, computers and calculators in mathematics teaching and learning, curricular development, pre- and in-service preparation of teachers of mathematics.

### Work experience

1998 - present Professor, Arizona State University  
1992 - 1998 Associate Professor, Arizona State University  
1989 - 1992 Associate Professor, San Diego State University  
1984 - 1989 Associate Researcher, Centro de Investigación en Matemáticas; and  
Instructor of Mathematics, U. of Guanajuato  
1982 - 1984 Teaching Associate, Ohio State University  
1980 - 1982 Técnico Académico, Centro de Investigación en Matemáticas, and  
Mathematics Instructor, University of Guanajuato  
1978 - 1980 Curriculum Development (Mathematics), Ministry of Education of  
Mexico  
1977 - 1980 Mathematics Instructor, National University of Mexico  
1975 - 1976 Teaching Assistant, National University of Mexico

### DIRECTED PROJECTS (Principal Investigator listed first)

Flores, A. (2004). *Glendale math leaders*. Improving Teacher Quality competition, Arizona Board of Regents (\$59 999).

Budan, K. & Flores, A. (2004) *Glendale Math Science Partnership*. Mathematics and Science Partnership programs, Arizona Department of Education (\$136 879).

Carlson, M., Thompson, P., Flores, A. et al. (2004-2006). *Developing a professional learning community model for secondary precalculus teachers: A model for teacher professional growth*. Funded by National Science Foundation (\$1,725, 560). 0353470

Middleton, J., Atkinson, R. Baek, J., Flores, A., Carlson, M., Millsap, R., Thompson, M. (2004-2007). *A Longitudinal Study of the Development of Rational Number Knowledge in the Middle Grades*. National Science Foundation (\$1,740,195). 0337795

- Dorn, R., & Flores, A. (2002). *AzGeoMath* (Integration of Geography and Mathematics). Funded by National Geographic Society Education Foundation (\$87 625).  
<http://alliance.la.asu.edu/geomath/general.html>
- Coleman, K., Califano, L., Middleton, J., and Flores, A. (1999-2004). *TREASUREmath: Teaching Reflectively: Extending and Sustaining use of Reforms in Mathematics Classrooms*. Funded by National Science Foundation (\$1,561,500). #9817737, 9911849
- Flores, A. & Bitter, G. (1994). *Preparing teachers for leadership in technology*. Funded by Arizona Board of Regents - Eisenhower Mathematics & Science Education Act (\$50 000) and Arizona State University (\$50 000). Integration of the use of technology in science and mathematics methods courses at ASU. <http://129.219.116.32/guidehome.html>
- Flores, A. (1988-1989). *Master's Programme in mathematics education*. Funded by the International Centre for Theoretical Physics, UNESCO. (\$2,000).
- Flores, A. (1987). *Manipulative materials for the teaching of mathematics: 15 laboratory activities for grades 7-9*. Funded by the State Department of Education of Guanajuato.
- Flores, A. (1987). *Computer laboratories for the teaching of mathematics*. Funded by the State Department of Education of Guanajuato. (\$2,000,000 pesos)
- Flores, A. (1987). *Integrating the computer in elementary school mathematics: 90 programs and activities*. Funded by Instituto Cervantes, S.L.P (\$2,520,000 pesos)
- Flores, A. (1986). *Mathematics laboratory and the computer in the teaching of junior high school mathematics*. Funded by the State Department of Education of Guanajuato. Secretaría de Educación, Cultura y Recreación, Estado de Guanajuato. (\$ 3,000,000 pesos)
- Flores, A. (1986). Programas de matemáticas y física para MicroSep. Subsecretaría de Planeación, SEP – Instituto Latinoamericano de Comunicación Educativa. (\$6,400,000 pesos)
- Shumway R. J. & Flores, A. (1985). *Conference -Workshop: Mathematical Concept Learning through Computer Programming*. Ohio State University and Centro de Investigación en Matemáticas.
- Flores, A. (1985 -1986). *Mathematics laboratory: 40 activities for high school*. Funded by the Ministry of Education of Mexico. Consejo del Sistema Nacional de Educación Tecnológica, Subsecretaría de Educación Tecnológica. (\$7,544,378 pesos)

#### **ARTICLES** (peer reviewed journals)

- Flores, L. & Flores, A. (Accepted) Calculus, paper, scissors. *PRIMUS*,
- Flores, A. (Accepted). Hinged geometry. *ON-Math...Online Journal of School Mathematics*
- Flores, A. (2006) How do students know what they learn in middle school mathematics is true? *School Science and Mathematics, 106*,
- Flores, A., Turner, E. E., & Bachman, R. C. (2005). Posing problems to develop understanding: Two teachers make sense of division of fractions. *Teaching Children Mathematics, 12, 117-121*.
- Flores, A. (2005). ¿Cómo saben lo alumnos que lo que aprenden en matemáticas es cierto?

- Educación Matemática*, 17(3), 5-24.
- Flores, L. and Flores, A. (2005). Cálculo, papel, tijeras. *Eureka*, 20, 34-38.
- Flores Peñafiel, A. (2005). Conexiones entre matemáticas elementales y avanzadas: Exploraciones con 142857 para estudiantes y maestros. *Eureka*, 20, 39-44.
- Flores, A. and Klein, E. (2005). Connections between division and fractions in the third grade. *Teaching Children Mathematics*, 11(9), 452-457.
- Baek, J. M. & Flores, A. (2005). How does it feel? Teachers count on the alphabet instead of numbers. *Teaching Children Mathematics*, 12(2), 54-59. Also published in *Ohio Journal of School Mathematics*, 51, 50-53.
- Flores, A. (2005). Connecting the elementary with the advanced: Explorations with 142857 for students and teachers. *New Jersey Mathematics Teacher*, 63(1), 13-15.
- Flores, A. and Brittain, C. M. (2004). Writing for an audience in a mathematics methods course. *Teaching Children Mathematics*, 10(9), 480-486.
- Flores, A. and Brittain, C. M. (2003). Writing to reflect in a mathematics methods course. *Teaching Children Mathematics*, 10, 112-118.
- Flores, A and Regis, T. (2003). How many times does a radius square fit into the circle? *Mathematics Teaching in the Middle School*, 8, 363-368.
- Flores, A. (2002). The kinematic method in geometry. *PRIMUS*, 12, 321-333.
- Flores, A. (2002). If pi were equal to 3.... *Ohio Journal of School Mathematics*, 46, 41-44.
- Flores, A. (2002) Interactive string parabolas. *ON-Math...Online Journal of School Mathematics*, available on line [http://my.nctm.org/eresources/journal\\_home.asp?journal\\_id=6](http://my.nctm.org/eresources/journal_home.asp?journal_id=6)
- Flores, A., Knaupp, J. E., Middleton, J. A., & Staley, F. (2002). Integration of technology, science, and mathematics in the middle grades: A teacher preparation program. *Contemporary Issues in Technology and Teacher Education*, [Online Serial] 2(1). Available: <http://www.citejournal.org/vol2/iss1/mathematics/article1.cfm>
- Flores, A. (2002). How do children know what they learn in mathematics is true? *Teaching Children Mathematics*, 8, 269-274.
- Flores, A. (2002). A rhythmic approach to geometry. *Mathematics Teaching in the Middle School*, 7, 378-383.
- Perkins, I and Flores, A. (2002). Why don't teachers know all the ways? *Mathematics Teaching in the Middle School*, 7, 262-263.
- Flores, A. (2002). Learning and teaching mathematics with technology. *Teaching Children Mathematics*, 9, 308-310.
- Perkins, I. & Flores, A. (2002). Mathematical notations and procedures of recent immigrant students. *Mathematics Teaching in the Middle School*, 7, 346-351.
- Lappan, G. and Flores Peñafiel, A. (2002). Volúmenes de cilindros con la misma superficie lateral. *Eureka*, 18, p.18 - 24.
- Flores, A. (2001). Make *Teaching Children Mathematics* Your Journal. *Teaching Children*

*Mathematics*, 8, 1.

- Flores, A. & Perkins, I. (2001). Helping children jump from arithmetic to algebraic notation using geometric representations. *Ohio Journal of School Mathematics*, 44, 23 - 28.  
(Reprinted in *Iowa Council of Teachers of Mathematics Journal*, 29, 36-40, Spring 2002)
- Flores Peñafiel, A. (2001). El método cinematográfico en geometría, *Eureka*, 17, 5-14
- Flores, A. & Turner, E. (2001). Inclined planes and motion detectors: a study of acceleration. *School Science and Mathematics*, 101(3), 154-161.
- Flores, A. (2000). Surface area of the sphere: A heuristic argument. *PRIMUS*, 10(4), 345-350.
- Flores Peñafiel, A. (2000). Argumentos mecánicos en geometría. *Eureka*, 16(August), 22-30.
- Flores, A. (2000). The parabola as the envelope of a family of straight lines. *PRIMUS*, 10(3), 257-266.
- Flores, A. (2000) Mathematics of children, mathematics for children. *New England Mathematics Journal*, 32(2), 18-26.
- Flores Peñafiel, A. (2000). Uso de representaciones geométricas para facilitar la transición de la aritmética al álgebra. *Eureka*, 15, 16-21.
- Flores Peñafiel, A. (1999). Las representaciones geométricas como un medio para cerrar la brecha entre la aritmética y el álgebra. *Educación Matemática*, 11(3), 69-78.
- Flores Peñafiel, A., & Ramírez, N. G. (1999). Problemas a la carta. *Eureka*, No. 14, 14-24.
- Flores, A. (1999). Mechanical arguments in geometry. *PRIMUS*, 9(3), 241 - 250.
- Flores, A. (1999). The law of cosines: Connections for future teachers. *PRIMUS*, 9(2), 123-132.
- Flores Peñafiel, A. (1999). El área de la esfera: Un argumento heurístico. *Eureka*, No. 14, 53-55
- Flores Peñafiel, A. (1998). Razones de peso en geometría. *Miscelánea Matemática*, 27, 1-14.
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- Flores, A. (1998). Mean machines. *Mathematics Teacher*, 91, 266-268.
- Flores, A. & Birge, L. (1998). Ancestry of humans and bees. *School Science and Mathematics*, 98, 99-103.
- Flores, A. (1997). Curves as envelopes with the Geometer's Sketchpad. *Mathematics and Computer Education*, 31(1), 56-65.
- Flores Peñafiel, A. (1997). Soluciones geométricas a problemas de máximos y mínimos. *Miscelánea Matemática*, 26, 49-57.
- Flores, A. & Guest, A. (1997). Fibonacci in the forest. *School Science and Mathematics*, 97, 388-392.
- Middleton, J. A., Flores, A., Knaupp, J. (1997). Shopping for technology. *Educational Leadership*, 55(3), 20-23.
- Flores, A. & Perkins, I. (1996). Tin-can ice cream. *School Science and Mathematics*, 96, 46-49.

- Flores Peñafiel, A. (1995). Nexos en el razonamiento proporcional. *Educación Matemática*, 7(2), 113-125.
- Flores Peñafiel, A. (1995). Geometría de iteraciones numéricas. *Miscelánea Matemática*, 22, 37-49.
- Flores, A. (1995). Bilingual lessons in early-grades geometry. *Teaching Children Mathematics*, 1(7), 420 - 424. (Also in Eisenhower National Clearinghouse for Mathematics and Science Education (1996). Disc of Curriculum Resources for Mathematics and Science Education, vol. 1, no. 2. Washington, DC: Superintendent of Documents, U.S. Government Printing Office.)
- Flores, A. (1995). Explorando funciones con una calculadora gráfica. *Educación Matemática*, 7(1), 125-133.
- Flores, A. (1995). Connections in proportional reasoning: Levers, arithmetic means, mixtures, batting averages, and speeds. *School Science and Mathematics*, 95, 423-430.
- Flores, A. (1994). Geometry of numeric iterations. *PRIMUS*, 4(1), 29-38.
- Flores Peñafiel, A., Philipp, R., Sowder, J. T., y Schappelle, B. (1994). La reflexión en la práctica de la enseñanza de las matemáticas: Cuatro maestros extraordinarios. *Educación Matemática*, 6(1), 32-45.
- Philipp, R., Flores, A., Sowder, J. & Schappelle, B. (1994). Conceptions and practices of extraordinary mathematics teachers. *Journal of Mathematical Behavior*, 13, 155 - 180.
- Flores, A. (1993). Connections: A lottery, a computer and the number  $e$ . *Mathematics Teacher*, 86, 652-655.
- Flores, A. (1993). The shadows of mathematics. *Arithmetic Teacher*, 40, 428-429.
- Flores, A. (1993). Pythagoras meets Van Hiele. *School Science and Mathematics*, 93(3), 152-157.
- Flores, A., Pérez, R. I. (1993). Mathematics for gifted students in grades K- 3: Early intervention and identification of gifted potential. *SCOPE*, 92(3), 33-41.
- Flores Peñafiel, A. (1993). Guía para evaluar paquetes de cómputo educativos. *Educación Matemática*, 5(1), 58-72.
- Flores Peñafiel, A. (1993). La criba de Eratóstenes, una conjetura y una prueba. *Educación Matemática*, 5(1), 96-98.
- Flores Peñafiel, A. (1993). Un tratamiento geométrico de la inducción matemática: Pruebas que explican. *Miscelánea Matemática*, 19, 11-23.
- Flores Peñafiel, A. (1993). Cálculo con computadoras y calculadoras gráficas. *Cuadernos de Investigación*, No. 23, Año 7 (Feb), 41-53.
- Flores Peñafiel, A. (1992). Factorización de expresiones algebraicas: Cuatro trucos. *Educación Matemática*, 4 (3), 57-61.
- Flores Peñafiel, A. (1992). La feria de Pitágoras. Part 1 *Educación Matemática*, 4 (1), 66-83. Part 2, *Educación Matemática*, 4(2), 62-78.

- Flores Peñafiel, A. (1992). Ida y vuelta: Primero adivinar, luego probar. *Educación Matemática*, 4 (2), p.79-96.
- Flores, A. (1992). A geometrical approach to mathematical induction: Proofs that explain. *PRIMUS*, 2, 393-400.
- Flores, A. (1992). Mathematical connections with a spirograph. *Mathematics Teacher*, 85, 129-137.
- Flores, A. (1991). Calculators in calculus: that's the limit. *PRIMUS*, 1(3), 295 - 301.
- Flores, A. (1991). A puzzle of mathematical formulas. *PRIMUS*, 1 (4), 397 - 400.
- Flores, A. (1991). Rompecabezas Matemáticos. *Educación Matemática*, 3(2), 112-113.
- Reys, B. J., Reys, R. E., and Flores Peñafiel, A. (1991). Estimation Performance and Strategy Use of Mexican 5th and 8th Grade Sample. *Educational Studies in Mathematics*, 22, 353-375.
- Flores Peñafiel, A. (1991). La lotería, una computadora, y el número  $e$ . *Educación Matemática*, 3(3), p. 116-119
- Flores Peñafiel, A. (1991). ¿Qué es la educación matemática? Una caracterización a través de ocho problemas. *Educación Matemática*, 3 (1), p. 67-76.
- Flores Peñafiel, A. (1991). Cuadrados mágicos para la multiplicación. *Educación Matemática*, 3(2), p. 110-111.
- Flores Peñafiel, A. (1991). Formación de maestros de matemáticas para nivel medio superior: Un marco de referencia para programas escolarizados. *Educación Matemática*, 3(2), p.6-17.
- Flores Peñafiel, A. (1991). Las calculadoras en cálculo: El límite. *Educación Matemática*, 3 (1), p. 110 -119.
- Flores Peñafiel, A. (1990). Un límite interesante con una tira de papel. *Educación Matemática*, 2 (2), p. 61-63.
- Flores Peñafiel, A., Reys, B., Reys, R. (1990). Desempeño y estrategias en la estimación en operaciones aritméticas de alumnos de quinto de primaria y segundo de secundaria en México. *Educación Matemática*, 2 (1), 30-44.
- Berlanga, R., Flores Peñafiel, A. (1990). La regla de Leibniz para diferenciar un producto: Una prueba usando la regla de la cadena. *Educación Matemática*, 2 (3) p. 60.
- Flores Peñafiel, A. (1990). El mismo cumpleaños: Explorando el azar con una microcomputadora *Educación Matemática*, 2(1), 58-60.
- Flores Peñafiel, A. (1990). Parabela. *Matemáticas* 17-18 (March), p. 2 - 6.
- Flores Peñafiel, A. (1989). ¿Debe el maestro de matemáticas enseñar computación? *Educación Matemática*, 1(2), p. 6-11.
- Flores Peñafiel, A. & White, A. L. (1989). Exploration of the mean as a balance point. *School Science and Mathematics*, 89, 251-257.
- Flores Peñafiel, A. (1987). Family Planning. *School Science and Mathematics*, 87 (6), central insert.

Flores Peñafiel, A. (1987). Efecto de programar la computadora en el aprendizaje de conceptos de cálculo. *Cuadernos de Investigación*. Año 2, No. 1, p. 1-75.

Flores, A. (1985). Parabella. *Mathematics Teacher*, 78, 30 - 33, 1985.

Flores, A. (1984). A Microcomputer and the law of small numbers. *Arithmetic Teacher*, 31(7) 60-61.

#### **BOOK CHAPTERS** (peer reviewed)

Flores, A. (Accepted). Using graphing calculators to redress beliefs in the law of small numbers. In G. Burrill (Ed.), *Thinking and reasoning with data and chance, 2006 Yearbook*. Reston, VA: National Council of Teachers of Mathematics.

Flores, A. & Pateracki, C. (Accepted). Learning to think and reason with data and chance. In G. Burrill (Ed.), *Thinking and reasoning with data and chance, 2006 Yearbook*. Reston, VA: National Council of Teachers of Mathematics.

Sealey, V. and Flores Peñafiel, A. (2005). Entender la derivada: Sí se puede. In F. Hitt & J. C. Cortés (Eds.), *Reflexiones sobre el aprendizaje del cálculo y su enseñanza* (pp. 175-196) Morelia, Michoacán: Editorial Morevallado.

Flores Peñafiel, A. (2002). Geometric Representations in the Transition from Arithmetic to Algebra. In F. Hitt (Ed.), *Representations and Mathematics Visualization* (p. 9-29). México: Departamento de Matemática Educativa del CINVESTAV-IPN.

Flores, A. (2002). Profound understanding of division of fractions. In B. H. Litwiller (Ed.), *Making sense of fractions, ratios, and proportions, 2002 Yearbook* (p. 237-246). Reston, VA: National Council of Teacher of Mathematics.

Flores, A. (2001). From the perspective of a newcomer: Reflections on doctoral programs in mathematics education. In R. E. Reys and J. Kilpatrick (Eds.), *One Field, Many Paths: U.S. Doctoral Programs in Mathematics Education* (p. 131-134). CBMS Issues in Mathematics Education 9, Providence. RI: American Mathematical Society.

Flores Peñafiel, A. (2000). Geometric representations in the transition from arithmetic to algebra. In F. Hitt (Ed.) *Working Group Representations and Mathematics Visualization (1998-2000)*, North American Chapter of the International Group for the Psychology of Mathematics Education (p. 89-109). Mexico: Cinvestav-IPN.

Flores Peñafiel, A. (1997). Family Planning. In. D. F. Berlin (Ed.), *SSMILes: School Science and Mathematics Integrated Lessons* (p. 9 - 15). Bloomsburg, PA: School Science and Mathematics Association.

Flores Peñafiel, A. & White, A. L. (1997). Exploration of the mean as a balance point. In. D. F. Berlin (Ed.), *SSMILes: School Science and Mathematics Integrated Lessons* (p. 67 - 74). Bloomsburg, PA: School Science and Mathematics Association.

Flores, A. (1997). Sí se puede. It can be done: Quality mathematics in more than one language. In J. Tentracosta (Ed.), *Multicultural and gender equity in the mathematics classroom 1997 Yearbook* (p. 81-91). Reston, VA: National Council of Teachers of Mathematics.

Flores Peñafiel, A. (1996). Acción, comunicación y reflexión: Componentes esenciales para entender matemáticas. In M. Santos and E. Sánchez (Eds.) *Perspectivas en educación*

*matemática* (p. 85-102). México: Grupo Editorial Iberoamérica.

- Flores, A., Sowder, J. T., Philipp, R., & Schappelle, B. (1995). Orchestrating, promoting, and enhancing mathematical discourse in the middle school: A case study. In J. T. Sowder & B. P. Schappelle (Eds.) *Providing a foundation for teaching middle school mathematics* (p. 275-299). Albany, NY: State University of New York Press.
- Sowder, J. T., Philipp, R. A., Flores, A. & Schappelle, B. (1995). Instructional effects of Knowledge Of and About mathematics: A case study. In J. T. Sowder & B. P. Schappelle (Eds.) *Providing a foundation for teaching middle school mathematics* (p. 253-274). Albany, NY: State University of New York Press.
- Philipp, R., Sowder, J. T., Flores, A. & Schappelle, B. (1995). A responsible mathematics teacher and the choices she makes: A case study. In J. T. Sowder & B. P. Schappelle (Eds.) *Providing a foundation for teaching middle school mathematics* (p. 301-326). Albany, NY: State University of New York Press.
- Flores Peñafiel, A. (1995). Orquestar, promover, y mejorar el discurso matemático en el quinto grado: Estudio de un caso. *Cuadernos de Investigación*, No. 32 (Noviembre), p. 1-28.
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#### **Articles in Proceedings** (\* indicates peer reviewed)

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- \*Flores, A. & Turner, E. (2000). Learning to teach division of fractions meaningfully. In M. L. Fernández (Ed.) *Proceedings of the Twenty-Second Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, vol. 2, p. 391-392. Columbus, OH: ERIC Clearinghouse for Science, Mathematics and Environmental Education.
- Flores, A., Philipp, R. A., Sowder, J. T. (1992). Docentes de matemáticas reflexivos. In *Memorias de la Sexta Reunión Centroamericana y del Caribe sobre Formación de Profesores e Investigación en Matemática Educativa*. Universidad Autónoma de Morelos. p. 247-252.
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- Flores, A., & McLeod, D. (1990). Calculus for middle school teachers using computers and graphing calculators. In *Proceedings Third Annual Conference on Technology in Collegiate*

*Mathematics*. Columbus, OH: The Ohio State University.

- Rodríguez, R. A., & Flores Peñafiel, A. (1989). Niveles de madurez matemática en el estudio de la geometría. In *Memorias de la tercera Reunión Centroamericana y del Caribe sobre Formación de Profesores e Investigación en Matemática Educativa*, San José, Costa Rica, p. 180 - 185.
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### Articles in other journals

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- Lappan, G. T. & Flores Peñafiel, A. (2001). Cilindros con la misma superficie lateral: ¿qué pasa con el volumen? *Boletín de Ficom*, 9 (February), p. 3-4. (Available on line <http://web.missouri.edu/~oc918/ficom.html>)
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### **Book reviews**

- Flores, A. (2005). Research in mathematics education in Mexico. Review of *El campo de la educación matemática 1993 - 2001* [The field of mathematics education 1993 - 2001]. Coordinated by A. Ávila & E. Mancera. *Journal for Research in Mathematics Education*, 36(4), 396-399.
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- Flores Peñafiel, A. (1987). La conquista del infinito. Review of: *Georg Cantor, his mathematics and philosophy of the infinite*, by J. W. Dauben. *Miscelánea Matemática*, 16, 79-84.
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- Flores, A. (2004). *Geometría para padres. Actividades*. Tucson, AZ: Math and Parents Partnership in the Southwest, University of Arizona. 145 p.

### **Dissertation**

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### **Thesis**

- Flores Peñafiel, A. (1976). El problema restringido de los tres cuerpos. Universidad Nacional Autónoma de México.

## BOOKS CO-AUTHORED

Boyd, C. J., Cummins, J., Malloy, C., Carter, J. & Flores, A. (2003). *Geometry*. New York: McGraw Hill Glencoe.

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: National Council of Teachers of Mathematics.

Secretaría de Educación Pública (1980). *Libro para el Maestro. Primer Grado*. México: Secretaría de Educación Pública.

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### Translations

Piaget en Perspectiva. *Revista ANPM*, 4, p. 28-37, 1979. Original source: *School Science and Mathematics*, 78, 475-480, 1978.

Mayor que y menor que. *Revista ANPM*, 5, 1979, p. 34-36. Original source: *Arithmetic Teacher* 25(4), January 1978, p. 52-53.

### Short publications

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### Letters to the editor

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Flores, A. (1995) Report of Site Visits to Puerto Rico Statewide Systemic Initiative. Presented to National Science Foundation Statewide Systemic Initiative Program.

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- Flores Peñafiel, A.; Mirabal, F.; Martínez, A.; Lerma J. Prácticas de matemáticas para segundo de secundaria. Comunicaciones del CIMAT, 1987, 36p.
- Flores Peñafiel, A.; Mirabal, F.; Martínez, A.; Lerma, J. Prácticas de matemáticas para tercer año de secundaria. Comunicaciones del CIMAT, 1987, 64p.
- Flores Peñafiel, A.; García, E. Bibliografía de Matemáticas: Nivel Licenciatura. Comunicaciones del CIMAT, 1987, 120p.
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- Domínguez, J.; Flores Peñafiel, A. Análisis estadístico de "El efecto de programar la computadora en el aprendizaje de conceptos de cálculo." Comunicaciones del CIMAT, 1987, 22p.
- Flores Peñafiel, A.; Mirabal, F. Prácticas de laboratorio: Números. Comunicaciones del CIMAT, 1986, 37p.
- Flores Peñafiel, A.; Mirabal, F. Prácticas de laboratorio: Probabilidad. Comunicaciones del CIMAT, 1986, 32p.
- Mirabal, F., Flores Peñafiel, A. Prácticas de laboratorio: Álgebra. Comunicaciones del CIMAT, 1986, 73p.
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- Flores Peñafiel, A. Representación de inclusión por diagramas de Venn. Guión para programa de computadora. Comunicaciones del CIMAT, 1986, 27p.
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- Flores Peñafiel, A. Relación de equivalencia. Guión para programa de computadora. Comunicaciones del CIMAT, 1986, 32p.
- Flores Peñafiel, A.; Monroy, L. Potencia eléctrica. Guión para programa de computadora. Comunicaciones del CIMAT, 1986, 17p.
- Flores Peñafiel, A.; Monroy L. Corriente eléctrica. Guión para programa de computadora. Comunicaciones del CIMAT, 1986, 15p.
- Flores Peñafiel, A.; Monroy, L. Corriente directa y corriente alterna. Guión para programa de computadora [Direct current and alternate current. Script for a computer program]. Comunicaciones del CIMAT, 1986, 19p.
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- Flores Peñafiel, A. Taller de probabilidad. [Probability workshop]. Comunicaciones del CIMAT, 1985, 12p.
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- Shumway, R. J.; Flores Peñafiel, A. Initial Survey: Computer Programming Research (K-16) 1964-1985. Comunicaciones del CIMAT, 1985, 25p.
- Flores Peñafiel, A. Logarithms via non standard analysis. Comunicaciones del CIMAT, 1982, 12 p.

- Flores Peñafiel, A. Factorización: taller para 1o y 2o de secundaria. Comunicaciones del CIMAT, 1981, 18p.
- Flores Peñafiel, A.; Johnson, D. A. Bibliografía anotada de matemáticas y de educación matemática. Comunicaciones del CIMAT, 1981, 77p.
- Flores Peñafiel, A. ¿Qué es el análisis no estándar? Comunicaciones Internas, Facultad de Ciencias, 1980, 22p.

## CLASS-NOTES

- Flores, A. *Teaching geometry 5 – 8*. Arizona State University, 2005.
- Flores, A. *Teaching mathematics with technology*. Arizona State University, 2004.
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- Flores, A. *ESL/BLE Methods of teaching mathematics*. Arizona State University, 2003.
- Flores, A. *Probabilidad experimental en el nivel medio*. Universidad Michoacana, 2001.
- Flores, A. *Teaching mathematics and science with technology*, Arizona State University, 2000.
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- Flores, A. *Integrated mathematics, science, and technology*. Arizona State University, 1998.
- Flores, A. *Estrategias para la enseñanza de las matemáticas*. Arizona State University, 1995. 236p.
- Flores A. *Teaching mathematics in the middle grades*. Arizona State University, 1995.
- Flores, A. *Actividades y textos para la enseñanza de las matemáticas*. Arizona State University, 1994.
- Flores, A. *Teaching mathematics in the elementary school*. Arizona State University, 1993. 276 p.
- Flores, A. *Teaching strategies in mathematics*. Arizona State University, 1993.
- Flores, A. *Geometry in 7 - 14 Curriculum*. Vol.1 Instructional materials and ideas. San Diego State University, 1991. 118 p.
- Flores, A.; Sowder, L. *Basic Mathematical Concepts*. San Diego State University, 1992. 131p.
- Flores, A. *Algorithms in Elementary Mathematics (Logo)*. San Diego State University, 1990. 144 p.
- Flores, A. *Modern Elementary Mathematics 2 (Geometry)*. San Diego State University, 1990. 139 p.
- Flores Peñafiel, A. *Cómo plantear y resolver problemas: notas para un curso*. Comunicaciones del CIMAT, 1989, 64p.
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- Flores Peñafiel, A. *Apuntes de mecánica*. Comunicaciones del CIMAT, 1987, 102p.
- Flores Peñafiel, A. *Introducción a la educación matemática*. Comunicaciones del CIMAT, 1986.

102p.

**PROFESSIONAL PRESENTATIONS (Selection):**

2005

*La demostración en matemáticas: Perspectivas del matemático, el alumno, y el maestro.* Congreso de las Sociedad Matemática Mexicana, México, DF (October). Plenary address.

*La historia de las matemáticas como recurso didáctico: algunos ejemplos de la efectividad de la regla de una falsa posición para la resolución de problemas geométricos.* 5o Congresso Ibero-Americano de Educação Matematica, Porto, Portugal (July). With V. Meavilla Seguí

*What information is needed on institutional doctoral programs in mathematics education and how can we go about getting it?* Association of Mathematics Teacher Educators Annual Conference, Dallas TX (January). With R. Reys, S. Cooper, K. Karp, F. Lester, & D. Lambdin.

2004

*Mathematics for secondary teachers: Curriculum and assessment* (panel with Dwyer, Ipiña, Kurtz, Metzler, Sanchez). Meeting 1000 American Mathematical Society. Albuquerque, NM (October).

2003

*Simulating Planet Orbits With a Dynamic Geometry Program.* School Science and Mathematics Association Annual Convention. Columbus, OH (October).

*SSMILes – School Science and Mathematics Integrated Lessons for Grades 4-9.* School Science and Mathematics Association Annual Convention. Columbus, OH (October). With A. L. White, J. Jansen, J. Whitmer

*Developing teachers' knowledge of mathematics.* Illinois Institute of Technology, Chicago, IL (January)

*Teachers knowledge of mathematics: Understanding of division of fractions.* University of Missouri. Columbia, MO (February)

2002

*The kinematic method in geometry.* Central Michigan University, Mt. Pleasant, MI (November)

*Mathematical notations and procedures of recent immigrant students.* University of Nebraska, Lincoln, NE (November)

*Forming a professional development network through writing and other means.* Arizona Association of Teachers of Mathematics, Phoenix, AZ (September)

2001

*Ejemplos del uso del método cinematográfico en geometría.* Conferencia Internacional sobre Uso de Tecnología en la Enseñanza de las Matemáticas. Universidad Michoacana y CINVESTAV, Morelia, México (January). Plenary session.

*Principles and Standards, Pre-K–5: A vision of school mathematics for 2000 and beyond.* NCTM Western Regional Conference, Yakima, WA (February)

*A closer look at Principles and Standards: Ideas into Actions.* National Council of Teachers of Mathematics Annual Meeting, Orlando FL (April). (With J. Joyner, A. Andrews, D. Clements, and C. Midgett.)

*Writing for NCTM Journals: Tips and discussion with editorial panel members.* National Council of Teachers of Mathematics Annual Meeting, Orlando FL (April). (With A. Reeves and S. Berger.)

Writing about research for a general practitioner audience. Research Pre-session National Council of Teachers of Mathematics Annual Meeting, Orlando FL (April). (With K. M. C. Ivey, D. R. Thompson, and R. M. Zbiek)

2000

*Geometric representations in the transition from arithmetic to algebra.* Paper presented at the Working Group Representations and Mathematics Visualization, Twenty-Second Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Tucson, AZ (October)

*Propuestas actuales sobre el currículum a nivel internacional.* Paper presented at 33 Congreso Nacional de la Sociedad Matemática Mexicana. Saltillo, Coahuila, México (October)

*Presente y futuro de la educación matemática.* Round table (with F. Hitt and F. Barrera). 33 Congreso Nacional de la Sociedad Matemática Mexicana. Saltillo, Coahuila, México (October)

*Learning to teach division of fractions meaningfully.* Paper presented at the Twenty-Second Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (with E. Turner). (October)

*Learning mathematics in two languages.* Paper presented as part of symposium *Latinos and mathematics: Issues of teaching and learning* (with S. Celedón Pattichis, L. Khisty, K. Chval.) Research pre-session. National Council of Teachers of Mathematics, Chicago (April)

*Principles and Standards Pre-K–2: A Mathematics Vision for 2000 and Beyond.* National Council of Teachers of Mathematics Annual Meeting, Chicago, IL (April).

*Principles and Standards: Algebra in Grades K–5? Why? What? How?* National Council of Teachers of Mathematics Annual Meeting, Chicago, IL (April) (with S. J. Russell)

*Mathematics for Bilingual Students.* Paper presented at Equity and Assessment for Elementary

and Secondary Students in a Culturally Diverse World. Mesa, AZ (April)

1999

*La geometría de los números.* Paper presented at Compumat 99. Universidad Autónoma de Yucatán. Mérida, Yucatán, México.

*Constructing meaning in mathematics in two languages: A response to Celedón- Pattichis.* Hispanic Issues Forum. Albuquerque, NM (September).

*Standards 2000: What we learned during the year of dialogue and feedback.* National Council of Teachers of Mathematics Western Regional Conference, Phoenix (December).

1998

*Bridging the gap between arithmetic and algebra using geometric representations.*

Climbing the equity summit: Ensuring success for every student. Phoenix, AZ.

*Authentic integration of technology in middle school mathematics and science.* National Council of Teachers of Mathematics Annual Meeting. Washington, DC, April. (With J. Middleton).

1997

*Velocities of variations.* Joint MAA-AMS meeting, Geometer' Sketchpad Users Group. San Diego, CA

*Learning mathematics in two languages.* Asilomar Mathematics Conference. Pacific Grove, CA.

*Sí se puede. It can be done: Quality mathematics in two languages.* NCTM Annual Meeting. Minneapolis, MN.

1996

*A science/mathematics classroom/laboratory for authentic integration of technology.* NSTA Western Area meeting, Phoenix, AZ (with F. Staley, J. Middleton, J. Knaupp)

Geometry connections for 4-6 students. Sixth Annual Glendale Bilingual/ESL Conference (March 9).

1995

*Sí se puede. It can be done. Quality mathematics in more than one language.* University of California - Irvine. (March).

1994

*Hands on geometry.* NCTM Regional meeting, Phoenix, AZ.

*Geometría a la mano.* Second Annual Secondary Bilingual and ESL Conference.

1993

*Teaching and learning with interactive multimedia:* Lessons learned from a program of research

and development. American Educational Research Association. (With G. Bitter and M. Hatfield)

*Matemáticas a la mano/Handy Math*. Arizona Association of Teachers of Mathematics (September)

1992

*Exploration of iterative processes and functions with a graphing calculator*. 7th International Congress of Mathematical Education, Québec, Canada.

*Docentes de matemáticas reflexivos: Cuatro maestros extraordinarios*. Sexta Reunión Centroamericana y del Caribe sobre Formación de Profesores e Investigación en Matemática Educativa. Cuernavaca, Mor., July.

*Mathematics for Gifted Bilingual Students*. Multicultural Classrooms - A Constructivist Viewpoint. College of Education and CRMSE, SDSU (May). Invited presentation.

*Con las manos en las matemáticas* [Hands on mathematics]. Annual Meeting, Arizona Association of Bilingual Educators, Prescott (October).

1991

*Mathematics education in Mexico: An update*. National Council of Teachers of Mathematics Regional Meeting, Louisville, KY

1990

*Calculus for middle school teachers using computers and graphing calculators*. Third Annual Conference on Technology in Collegiate Mathematics. Ohio State University.

*Research on computational estimation: a perspective of 3 countries*. Research pre-session Annual Meeting National Council of Teachers of Mathematics (with R. Reys, B. Reys, and S. Yoshikawa).

1989

*The effect of computer programming on the learning of calculus*. National Council of Teachers of Mathematics Annual Meeting, Orlando, 1989.

*Estimación computacional en los alumnos de quinto de primaria y segundo de secundaria en Guanajuato*. [Computational Estimation in fifth and eighth grade students in Guanajuato]. Primer Simposio Internacional sobre Investigación en Educación Matemática, Guanajuato (March).

1988

*Solución de problemas matemáticos*. [Solving of mathematical problems] 2o Congreso Estatal de Profesores de Matemáticas de Veracruz, Jalapa.

*La geometría y la solución de problemas*. Universidad Autónoma de Nuevo León.

*El meollo de las matemáticas.* [The core of mathematics] Primer Simposio Internacional en Educación Matemática (November).

1987

*Actualización por laboratorios.* [In-service courses with laboratories] 9o Congreso Asociación Nacional de Profesores de Matemáticas, Jalapa, Ver.

*El efecto de programar la computadora en el aprendizaje de las matemáticas* [Effect of computer programming in the learning of mathematics]. 1a Reunión Centroamericana y del Caribe sobre Formación de Profesores e Investigadores en Matemática Educativa. Mérida, Yuc.

1986

*Using computers to teach better mathematics.* National Council of Teachers of Mathematics Annual Meeting, Washington

*Las microcomputadoras en la enseñanza de las matemáticas.* Morelia. Mich.

*El laboratorio y la computadora en la enseñanza de las matemáticas: Un curso de actualización para profesores de matemáticas de secundaria .* Sociedad Matemática Mexicana, Guadalajara, Jal.

1985

*Teaching mathematics in Mexico and the U. S. - can we learn from each other?* National Council of Teachers of Mathematics Annual Meeting, San Antonio, Tex.

*Perspectives of Mathematics Education Research in Mexico.* Research pre-session, NCTM Annual Meeting, San Antonio, Tex.

*Uso de la computadora en la enseñanza de las matemáticas* [Use of the computer in the teaching of mathematics]. 4o Coloquio Departamento de Matemáticas CINVESTAV, Taxco, Gro.

*Cambios programáticos ante la influencia de las calculadoras y computadoras* (moderator). Guadalajara, Jal. Panel participants: German Bernacer, Octavio García, Peter Hilton, Walter Taylor, Carlos Velarde

1984

*Remaking the Curriculum.* 5th International Congress of Mathematics Education, Adelaide, Australia

*La microcomputadora en la enseñanza del cálculo.* Congreso Anual de la Sociedad Matemática Mexicana, Mérida, Yuc. (November).

*Cambios en el currículum de matemáticas.* Seminario La Enseñanza de las Matemáticas en la Educación Básica Hoy. Universidad Pedagógica Nacional, Cuautla, Mor. (November)

*Pequeños programas, grandes ideas.* Simposio Internacional La Computación en la Educación Infantil, UNAM.

1978

*Matemáticas ¿Lenguaje de la naturaleza?* 5o Congreso Nacional de la Asociación Nacional de Profesores de Matemáticas. Toluca, México.

*Formas y transformaciones.* 5o Congreso Nacional de la Asociación Nacional de Profesores de Matemáticas. Toluca, México (with Carlos Bosch Giral).

1977

*Hasta infinito y más allá.* Escuela Preparatoria, Universidad de Yucatán, Mérida, México.

## **EDITORIAL EXPERIENCE**

Editorial Board, American Education Research Journal: Teaching, Learning, Human Development (2004-

Editorial Panel, NCTM 2006 Yearbook *Thinking and reasoning with data and chance* (2003 - )

Editor, E-Teaching Tools department, *ON-Math*, National Council of Teachers of Mathematics (2005- )

Editor, Research, Reflection, Practice department, *Teaching Children Mathematics*, NCTM (2004 – 2006)

Member, *Mathematics for All* Panel, Educational Materials Committee, National Council of Teachers of Mathematics (2005-2007)

Editorial Board, *School Science and Mathematics* (2003 – 2006)

Chair, Editorial Panel, *Teaching Children Mathematics*, published by National Council of Teachers of Mathematics, 2000-2002; Member of Editorial Panel, 1999-2002.

Focus Issue Editor: Learning and Teaching Mathematics with Technology. *Teaching Children Mathematics*, 9 (February 2002 issue).

Member, Editorial Committee *Eureka*, published by Universidad Autónoma de Querétaro, 1998-present

Editorial Committee (founding member), *Educación Matemática* 1988 - 1989.

Member, International Committee of Collaborators, *Educación Matemática*, 1990 – present

## **Referee:**

*American Education Research Journal: Teaching, Learning, Human Development, Teaching Children Mathematics, School Science and Mathematics, Educación Matemática, PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies, Mathematics Teacher, Journal for Research in Mathematics Education, Canadian Journal of Science Mathematics and Technology, Educational Policy, Eureka, Bilingual Research Journal.*

## TEACHING EXPERIENCE

### Instructor of mathematics and mathematics education

1992 - present. Arizona State University:

Course on use of technology to teach integrated mathematics highlighted by National Educational Technology Standards [http://cnets.iste.org/teachers/t\\_scen-pro.html](http://cnets.iste.org/teachers/t_scen-pro.html)

#### Courses

SED 547 Teaching mathematics in the middle grades (5-9)

SED 598 Mathematics methods for early adolescents

SED 560 Teaching mathematics with technology

BLE 480 ESL/BLE Mathematics methods

DCI 791 Research in Mathematics Education 1, 2

EED 594 Teaching geometry in the middle grades

EED 598 Teaching geometry K-8

SED 594 Integrated mathematics, science and technology,

SED/EED 598 Teaching mathematics in the middle grades,

EED 498 Child in the natural world,

EED 498 Teaching for the scholarly life,

BLE 402 Teaching strategies in mathematics (bilingual),

BLE 598 Teaching mathematics to Spanish speakers,

EED 402 Teaching strategies in mathematics,

EED 380 Teaching mathematics in the elementary school,

EED/EMC 598 Technology in the teaching and learning of mathematics.

2004 *Technology in Teacher Education and Diversity in Teacher Education*, Preparing Mathematicians to Educate Teachers, University of Nebraska.

2003 *Technology in Teacher Education*, and *Diversity in Teacher Education*, University of Nebraska.

Geometry for Parents (eight 2-hour sessions). Chandler High School

2000 Math for Parents: Thinking Visually course (nine 2-hour sessions). Sunnyside High School, Tucson.

Portland State University: Mathematics with Sketchpad.

1999 Universidad Autónoma de Yucatán: Geometría dinámica

1997 Portland State University: Geometry with Sketchpad for High School Teachers

1994 San Diego State University-Calexico, TE 625 Instruction in mathematical problem solving

1989 - 1992 San Diego State University, Department of Mathematics

Modern Elementary Mathematics 1, and 2 (Geometry),

Math 210 Structure and Concepts in Elementary Mathematics 1

Math 211 Structure and Concepts in Elementary Mathematics 2

Math Ed 606 Geometry in 7-14 Curriculum,

Math 302 Basic Mathematical Concepts,

Math 309 Algorithms in Elementary Mathematics (Logo),

Math 310B

Math 121 Calculus.

1984 - 1989 University of Guanajuato:  
Research Seminar, Mathematics Education 1 (learning theories),  
Mathematics Education 2 (Curriculum analysis),  
Field experience (master's program),  
Introduction to mathematics education,  
Methods for the teaching of mathematics,  
Content in mathematics curriculum,  
Theories in mathematics education,  
Mechanics,  
History of mathematics,  
Differential and integral calculus.

**Mathematics teacher** 1985. Bachillerato tecnológico (High School). Calculus.

**Teaching Associate** 1982 - 1984. Ohio State University. Supervision of student teachers at Columbus schools (elementary, middle, junior high, and high school). Shadow seminar (Modern algebra concepts in school mathematics). Mathematics methods course for elementary teachers

**Instructor of Mathematics**

1981-1982. University of Guanajuato.  
Statistics,  
Differential equations,  
College Algebra.

1981-1982. Normal School of Guanajuato. Statistics.

1977-1979. National University of Mexico.  
Set theory,  
Linear algebra,  
Non-standard analysis,  
Calculus  
Multivariate Calculus.

1977. University of Yucatán. Topology, Analysis

**Teaching Assistant** 1975-1976. National University of Mexico. Calculus

**Workshops for students** 1976 - present. Kindergarten, Elementary (all grades), Middle, Junior High, and High School, College.

**In-service courses for mathematics teachers, and professional development workshops (selection)**

2005

*Geometry for teachers.* Two-week intensive summer course. Developed materials, taught, and

coordinated 4 instructors. *Southwest Colorado Mathematics Initiative*

*Teaching geometry for gifted students*. Korean Math Teacher Training Program. January 11.

*Use of geometrical representations and patterns to facilitate the learning of algebra: Practical ideas from research*. Scottsdale Community College, February 5.

2004

Measurement (four sessions). Glendale Elementary School District, October 11-14.

Geometry for parents (two sessions). MAPPS Materials Dissemination Conference, October 30.

Teaching geometry grades 5 and 6. 15 sessions. Glendale Elementary School District. June.

2003

Classroom assessment in mathematics. 5 sessions for 32 teachers K-3, 5 sessions for 40 teachers 4-8. Glendale Elementary School District. August 2003 – January 2004.

Incorporating technology in the education of elementary teachers, Preparing Mathematicians to Educate Teachers Workshop, University of Nebraska.

Making diversity part of teacher education, Preparing Mathematicians to Educate Teachers Workshop, University of Nebraska.

2002

Algebra. TEAMS 2 Project. Course for 63 teachers leaders K-8. North Carolina. June 17-28.

2001

Probabilidad experimental en el nivel medio. Taller para maestros de nivel medio. Universidad Michoacana, Morelia, México (January).

1999

Copper King Elementary School, Pendergast School District. Five 2-hour workshops

1995

T-Teams Workshop *Teaching mathematics to bilingual students*. November.

Geometry, paper, and cardboard: Activities for elementary and middle grade teachers. Workshop, CED, April 22.

1993

Hands on mathematics (with Nora Ramirez). Inservice course for middle school and high school teachers (June 14-24, July 6-15, August 2-12). Project supported by South Mountain Community College, Comprehensive Regional Center for Minorities, and Arizona State University.

Higher order thinking skills in mathematics through hands on activities for K-6 bilingual

students.

One week inservice course for teachers of bilingual students Mesa Unified School District No 4 (June 7-11)

Hands on mathematics institute (with Nora Ramírez) (first year) session 1 (grades 4-6), session 2 (7 - 9), (2nd year) session 3 (4-6), session 4 (6 - 8).

Mathematics enhancement for Gila River Indian Community. Materials and activities for in-service teachers, and prospective mathematics teachers (Sept-Dec 1993).

Workshop for teachers K-1 and 2-4, Migrant Student Program, Peoria School District, Loma Alta School, April 23.

1991

Project EXCEL: A gifted and talented education bilingual project. Major speaker for teacher training component.

1989 Uso de la computadora en la enseñanza de las matemáticas (short course) Universidad de Sonora.

1987 - 1989 In-service graduate courses in mathematics and mathematics teaching at the Instituto Tecnológico de León. (College)

1988 Resolución de problemas. Primer Simposio Internacional en Educación Matemática

1987 Coordination of courses in eight cities of the state of Guanajuato, 38 instructors, laboratory workshops, designed for 1543 teachers

1986 10 week course for 40 teachers (7-9 grades), laboratory and use of computers in the teaching of mathematics

Short courses Estimación and Solución de Problemas, Universidad Pedagógica Nacional.

1976 - 1989 Workshops for mathematics teachers (elementary, middle, junior high, high

### **Doctoral dissertations Chair**

Completed:

H. Bahadir Yanik (2006). *Prospective elementary teachers' growth in knowledge and understanding of rigid motion transformations.*

Sharon Whitehead (2006). *Poverty and factors leading to success in mathematics as told by AP Calculus students.*

Thomas G. Rothery (2006). *English as a second language students using technological tools and multiple representations to learn the real number line.*

James Vicich (2002). *Mathematical problem solving behaviors of college level developmental*

*algebra students.*

Derar Serhan (2000). *The effect of using graphing calculators on students' concept images of derivative at a point.*

Jenyi Chao (1999). *Effects of structured teaching method on students' understanding of angle and rotation in Logo geometry.*

Abdar-Rahman Al-Mekhlafi (1999). *The effect of instructional media on learning second language teaching strategies by preservice teachers.*

Kwansik Rho (1999). *The multi-user object oriented environment and changes of university students' conceptions of function relation.*

Abbas Johari (1998). *Effects of Inductive Multimedia Programs Including Graph on Creation of Linear Function and Variable Conceptualization.*

Sunny Baker (1996). *A study of access and attitudes regarding computer-mediated communication among socioculturally diverse students.*

In process:

Everett Louis, Wayne Porter, Marilyn LaCount, Mary Knuck, Melina Day, Ahyoung Kim, Don Hutchins.

#### **Doctoral Dissertation Committee member:**

Completed: Marcela Castro (2005), Trey Cox (2005), Phil Clark (2005), Scott Adamson (2005), Mark Burtch (2005), Cumali Oksuz (2004), Terri Kurz (2004), Kate Mahoney (2003), Sally Jacobs (2002), Dean Kirkpatrick (2002), Aisling Leavy (2001), Teruni De Silva (2001) Juan Manuel Estrada Medina (2000, CINVESTAV), Lisa Bote (2000), Zulbiye Toluk (1999), Mary Jo Steig (1999), Sinan Olkun (1999), Karen Koellner (1998), Glenn Smith (1998), Maurene Gerson (1996), Barbara Clark (1995), Norma Kastre (1995).

In process: Lynn Cozort, Rachel Formoso, Dina Brules, Marguerite George, Denise Nunley, Irene Bloom, Edward Coe, Nicole Engelke, Nanci Smith, Don Hutchins, Vicki Sealey

#### **Thesis advisor (Master's degree)**

*Fractal dimension in an advance-placement calculus classroom.* M. F. Harbinson, SDSU, 1992.

*Using calculators and computers to enhance understanding of concepts and procedures in calculus.* J. Mazzarella, SDSU. 1991.

*Effects of computer algebra on solving algebra word problems.* W. H. Speckman, SDSU. 1990.

*El modelo de Van Hiele del desarrollo del pensamiento geométrico: una experiencia en la Universidad Autónoma de Nuevo León.* Rosa Amelia Rodríguez Luévanos. Maestría en Ciencias Especialidad en Matemática Educativa, CINVESTAV, 1990.

*Un acercamiento a algunas ideas del cálculo diferencial empleando Logo y programas para*

*graficar*. E. Galindo, CINVESTAV 1988.

**Thesis committee member**

Jeanette Cortés, 2001 (Universidad Autónoma de Baja California), Patricia Dieck, 1997

**Master degree advisor**

In progress: Linda Hernandez, Koyal Roy, Sarah Kinner, Shari Stagner, Sladjana Laschober,.

Completed:

2005 Brent Bauman, Jonathan Kucick, Lisa Lewandowski, Angela Mazzola, Hsiu-Mei Lin, Anna Deken, Jennifer Printz, Shakeena Williams. With K. Wellner: Sarah Winzeler, Rachel Neuharth.

2004 Jacqui Ormston, Peggy Beasley, Jeanette Scott, Phi Nguyen, Mai Nguyen (with K. Wellner)

2003 Wayne Porter

2001 Cindy Behnke, Kathy Hanson, Lauren Goodwin-Bell, Troy Regis, Christine Estrada, Mary Garcia

2000 C. Wetzel, H. Brezinsky, Joe De la Huerta, K. Edmonds, Sherry Niewold, T. Smith, W. Mitchell

1999 Angela Parker, D. Ungerman, Erin Turner, K. Powers, K. Dawson, Laura Gerstner, L. Wood, Sean Arteaga, S. Beams, S. Riley, T. Upchurch, Sandra Franco.

1998 C. Cannon, S. Cope, B. Durkin, N. Lorden, L. Morales, T. Myers, J. Day, K. Jones, T. Johnson, July Miwa.

1997 M. Starling, L. Gonzalez, M. Gillmore, Ana Medrano, G. Miller, M. Capriotti, M. Owara.

1996 D. Figueroa, Carmina Mendoza, A. Wallace, M. Whittiker, T. Livingston, R. Curtis, E. Funke, S. Headley, Josie Figueroa, G. Schappelle.

1995 Elizabeth B. Siemons

**Other theses advised**

José Contreras Francia. *Aplicaciones de geometría euclídeana*. Universidad de Guanajuato, 1990.

Daniel Eudave Muñoz. *Las actitudes hacia las matemáticas de los maestros y alumnos de bachillerato*. Universidad Autónoma de Aguascalientes, 1989.

Angel Navarrete. *Teoría, algoritmos y programas para el cálculo de valores propios y vectores propios*. Universidad de Yucatán, 1987.

**SERVICE TO THE UNIVERSITY (selection)**

Chair, Search Committee, Mathematics Education, Curriculum and Instruction (2004-2005)

Chair, Search Committee, TEAMS coordinator, Curriculum & Instruction (2003)  
Chair, Search Committee, Mathematics Education, Curriculum & Instruction (2000-2001).  
Chair, Search Committee, Bilingual Education, Curriculum & Instruction (1996-1997)  
Chair, Search Committee, Mathematics Education, Curriculum and Instruction (1993-1994)  
Member, College Personnel Committee (2001)  
Member, University Promotion and Tenure Committee (2001 - 2004)  
Executive Committee Interdisciplinary Ph. D. Program in Curriculum & Instruction,  
Mathematics Education Concentration (1998-present)  
Executive Committee, Interdisciplinary Ph. D. Program in Curriculum & Instruction, Elementary  
Education Concentration (1994 - 1998)  
Member, Affirmative Action Committee, College of Education 1998-1999  
Member, Technology Advisory Committee, College of Education. 1998  
Member, Undergraduate Research Committee, College of Education, 1998-1999  
Mathematical Sciences Planning Committee, Arizona State University, 1994  
Calculus Committee, Department of Mathematical Sciences, SDSU, 1990 - 1991

### **PROFESSIONAL CONSULTANT SERVICES (selection)**

Advisory Board (2005- ) *Equalizing Mathematics Achievement: Teachers and Students Problem Solving Online.*

Advisory Board (2004- ) *Southwest Colorado Mathematics Initiative*, funded by the National Science Foundation. Preparing 53 mathematics teachers in SW Colorado.

National Advisory Board (2004- ), *Math in the Middle Institute Partnership*, University of Nebraska, funded by the National Science Foundation.

Project Advisory Committee member, *Preparing, Inspiring and Connecting Students to College and Opportunity: Increasing the Quality and Intensity of Professional Development of Mathematics Teachers*, College Board, funded by National Science Foundation.

Advisory Board member, *Project SUMMARY: Using Student-Generated Strategies in Instructional Interactions to Build Multiplicative Structures in Urban Schools* (NSF funded project, 2002)

Advisory Board (2001-2004), *Teaching Excellence and Mathematics II* (NSF funded project to develop a cadre of 66 highly qualified elementary mathematics teachers across North Carolina)

PME NA 22 Organizing Committee (2000)

External reviewer, tenure / promotion to associate professor, University of New Mexico (2005)

External reviewer, promotion to professor, University of North Carolina at Chapel Hill (2002)

External reviewer, promotion to full professor, Utah State University (2000)

External reviewer, tenure and promotion to associate professor, Utah State University (2000)

External reviewer, tenure and promotion to associate professor, University of Arizona (2000)

External reviewer, promotion to full professor, The Ohio State University (1999)

Mathematics Education expert commentary for lessons in Math•ed•ology, funded by NSF (1999)

Referee for Division K, Section 5a of AERA meeting (1999)

Referee for Division C, Section 2 of AERA meeting (1997, 1996)

Member, Mathematical Sciences Planning Committee (Arizona State University, 1995).

External evaluator for promotion and tenure, College of Education, University of New Mexico. (1995)

Creating Equity and Access Committee, Arizona Department of Education (1994)

Monitor, Puerto Rico Statewide Systemic Initiative (1993-1995)

Planning Leadership Team for the Phoenix Urban Systemic Initiative (1993)

Articulation of Mathematics Curriculum Continuum. Tempe Elementary School District. (June 2-3, 1993).

Project Challenge: Remedial mathematics assessment and evaluation. Mathematics program for high school drop-outs. State of Arizona Department of Emergency and Military Affairs, 1993).

Project First Steps: A gifted and talented early intervention project. “Patterns” Develop materials and presentation for inservice teachers. San Diego, CA (May, 1993)

Project First Steps: A gifted and talented early intervention project. “Probability and creativity”. San Diego, CA (Nov., 1992)

Site visiting team NSF Statewide Systemic Initiative (Massachusetts 1992, Maine 1992, Virgin Islands, 1993)

Reviewer and panelist. Statewide Systemic Initiatives Program. Washington, DC (Dec. 1992).

Project EXCEL: A gifted and talented education bilingual project. Title 7 Federal Assistance Grant. Major speaker for teacher training component. Develop materials and make classroom presentations on problem solving and creative thinking skills in mathematics, focus on geometry. (Spring 1991)

Project EXCEL: A gifted and talented education bilingual project. Title 7 Federal Assistance Grant. Develop materials and make classroom presentations, with focus on probability in the early grades. (February - March 1992)

QUASAR Quantitative Understanding: Amplifying Student Achievement and Reasoning. Documenting activities at the Spurgeon Intermediate School in Santa Ana, CA. February 3-7, April 6-10 1992.

### **Other services to the profession**

Member, Committee on George Pólya Awards, American Association of America.

Member, Related Conferences Committee, Association Mathematics Teachers Educators (2001-

2003)

Board of Directors of SIG/RME, Steering Committee, AERA Special Interest Group Research in Mathematics Education 2001-2003

### **Professional Memberships**

National Council of Teachers of Mathematics

School Science and Mathematics Association

Mathematical Association of America

American Education Research Association

AERA SIG Research in Mathematics Education

Association of Mathematics Teachers Educators

North American Chapter of the International Group for the Psychology of Mathematics

Education, Arizona Association of Teachers of Mathematics

Ohio Council of Teachers of Mathematics

Sociedad General de Escritores de México

### **Community service (selection)**

2005 Interviewed by Prensa Hispana. In Librada Martínez: Matemáticas: El reto de los estudiantes hispanos. Prensa Hispana, 13 de abril de 2005, p. 1E.

Interviewed by The Arizona Republic, In Monica Mendoza: Schools + kids = math tests *Teachers find no magic equation for right textbook*. Feb 22.

2004 Math Parent Session (conducted in Spanish), Imes School, Glendale Elementary School District (February 12)

2003 Mathematics Workshop. Number tricks for gifted 4th and 5th grade students. Longview School, Osborn School District, Phoenix (January 10)

Fraction demonstration lesson. 5<sup>th</sup> grade, Glendale American School (October).

Live interview on KPHX 1480 on using computers in the preparation of teachers of mathematics (April 22)

2002 *So you want to be a math tutor?* Workshop for 20 tutors of underserved children on how to teach mathematics, for America Counts! Academic Community Engagement Services Arizona State University (September 5)

2001 Interviewed by Prensa Hispana. In Librada Martínez: Profesores de Arizona desestiman enseñanza de matemáticas por computadora." Prensa Hispana, 19 de septiembre de 2001, p. 5B.

2000 Interviewed by Los Angeles Times. In Richard Lee Colvin: "Teachers Group Recommends Math Lessons in Preschool Education" 13 April

## **DISTINCTIONS**

Member, U.S. National Commission for Math Instruction (USNC/MI), National Research Council, Policy and Global Affairs Division (PGA), Board on International Scientific Organizations (BISO) (2005-2008).

Outstanding reviewer, *American Educational Research Journal: Teaching, Learning and Human Development* (2005)

Biographical profile included in *Who is who in American Education* 7<sup>th</sup> ed (2006-2007).

Biographical profile included in *Who is who in America* 58<sup>th</sup> ed (2004).

Biography included in *Latinos and Mathematics, Hispanic-American Baseline Essays*, Portland Public Schools. Available <http://www.pps.k12.or.us/depts-c/mc-me/essays.php#hiam>

Pleiades Chapter of Mortar Board award “Knowledge knows no boundaries” (1998)

Invited Minority Scholar in Residency, Illinois State University (1997).

Member, Comité Internacional de Colaboradores, *Educación Matemática*, 1989- present

Organizer, Guanajuato State Meeting of Mathematics Teachers, 1988, 1987

Vice-president Asociación Nacional de Profesores de Matemáticas 1987-1989

President, Guanajuato Section, Asociación Nacional de Profesores de Matemáticas 1987-1989

Fellowship, Sistema Nacional de Investigadores 1986-1989

Scholarship, Consejo Nacional de Ciencia y Tecnología, 1983 – 1984

Scholarship, UNAM 1975-1978

January 2006