Supporting PreK-12 Mathematics in HISD

1987 - Present
Vision and Mission

• Provide a bridge between the Rice University mathematics research community and Houston-area mathematics teachers

• Help teachers and administrators better understand the nature of mathematics, the effective teaching and assessing of mathematics, and the importance of mathematics in today's society
Vision and Mission

• Founded on the belief that sustained instructional changes can best be supported through the development of professionalism among teachers

• Creation of a network of teachers who have extensive knowledge of both mathematical content and pedagogy
Goals

• Increase the mathematical knowledge of Houston-area teachers

• Promote and model effective teaching and assessment of mathematics with active student involvement in the learning process

• Encourage the appropriate use of technology and manipulatives in the teaching of mathematics
Goals

• Provide strategies to actively engage struggling students, English language learners, and underrepresented minorities in learning mathematics

• Understand and promote research-based teaching and learning of mathematics
Goals

• Encourage classroom teachers to participate in professional organizations and in the mathematics/school reform process

• Provide a forum for communication and collaboration between and among teachers and university mathematicians and scientists
Goals

• Form a local mathematics education network to implement national, state, and local reform efforts in mathematics education

• Develop mathematics teachers' leadership capacity

• Create innovative curricula in mathematics

• Advise developers of mathematics programs and curricula
RICE UNIVERSITY SCHOOL MATHEMATICS PROJECT

- Research & Dissemination
- Annual Spring/Fall Network Conferences
- Academic-Year Programs
- University, School District, and Community Collaborations
- Institutes
- Urban Programs
- Curriculum

RICE UNIVERSITY SCHOOL MATHEMATICS PROJECT
http://rusmp.rice.edu
RUSMP master teachers

Mathematics content and pedagogy

Curriculum development
RICE UNIVERSITY SCHOOL MATHEMATICS PROJECT

Research & Dissemination

Academic-Year Programs

Institutes

Rice Summer Campus Program

Annual Spring/Fall Network Conferences

University, School District, and Community Collaborations

Urban Programs

http://rusmp.rice.edu

RICE UNIVERSITY SCHOOL MATHEMATICS PROJECT

Curriculum
RUSMP support teachers

Summer program for students

Collaborative planning
Keynote presentations from distinguished mathematicians and educators

Activities led by RUSMP alumni, master and support teachers
# RUSMP Learning Plan

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<td>Concept Development Activities</td>
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| Procedural Knowledge and Basic Facts | Originality and Creativity  
*Student Products*  
Written  
Verbal  
Kinesthetic  
Visual |
| Assessment | |
| Related TEKS | |
The RUSMP Geometry Module

- Effectively assists teachers in developing a deeper understanding of the concepts in Geometry
- Helps teachers develop pedagogical skills
- Recognized by the Math Forum as exemplary curriculum for mathematics educators
RICE UNIVERSITY
School Mathematics Project

Academic-Year Programs
Mathematics Leadership Institute

Rice University received a $3.8 million National Science Foundation grant to establish a mathematics-science partnership with HISD

- 19 HISD high schools
- 28 HISD MLI lead teachers
- 8 Certified Texas Master Mathematics Teachers (8-12)
- 9 MLI lead teachers currently preparing to become certified Texas Master Mathematics Teachers (8-12)
Collaborations
Collaborations
Collaborations with CIA

- Academic-Year Courses
- Mathematicians in Motion: Best Practices in Algebra 1
- Math-A-Letics
- ATeaMS
- CBAs
- HAPG Development
Project GRAD
RICE UNIVERSITY
School Mathematics Project

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Curriculum

RICE UNIVERSITY SCHOOL MATHEMATICS PROJECT
http://rusmp.rice.edu
RUSMP Impact

• Nearly 7,000 teachers have participated
• Improved teacher knowledge of mathematics
• Increased teacher efficacy
• Teacher classroom beliefs and practices better aligned to the NCTM *Standards*
RUSMP Impact

- Increased collaboration among teachers
- Improved school-level instructional support
- Expanded school-level mentoring and team leadership
RUSMP Impact

- Increased student learning and achievement in mathematics
- Increased student interest in mathematics
- Decreased student drop-out rates
Mathematics Leadership Institute Impact

• Increased student achievement on TAKS
• Improved school-level instructional support
• Expanded school-level mentoring and team leadership
Wharton ES Spatial-Visualization Research Project
Wharton ES Spatial-Visualization Research Project
Recognition of RUSMP

National Staff Development Council cited RUSMP as one of the top professional development programs in mathematics in US for its impact on student achievement in

*What Works in the Middle* (1999),
*What Works in the Elementary School* (2002),
Recognition of RUSMP

Recognition of RUSMP

Visit the Rice University School Mathematics Project web site: http://rusmp.rice.edu