



RICE UNIVERSITY
SCHOOL MATHEMATICS PROJECT

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

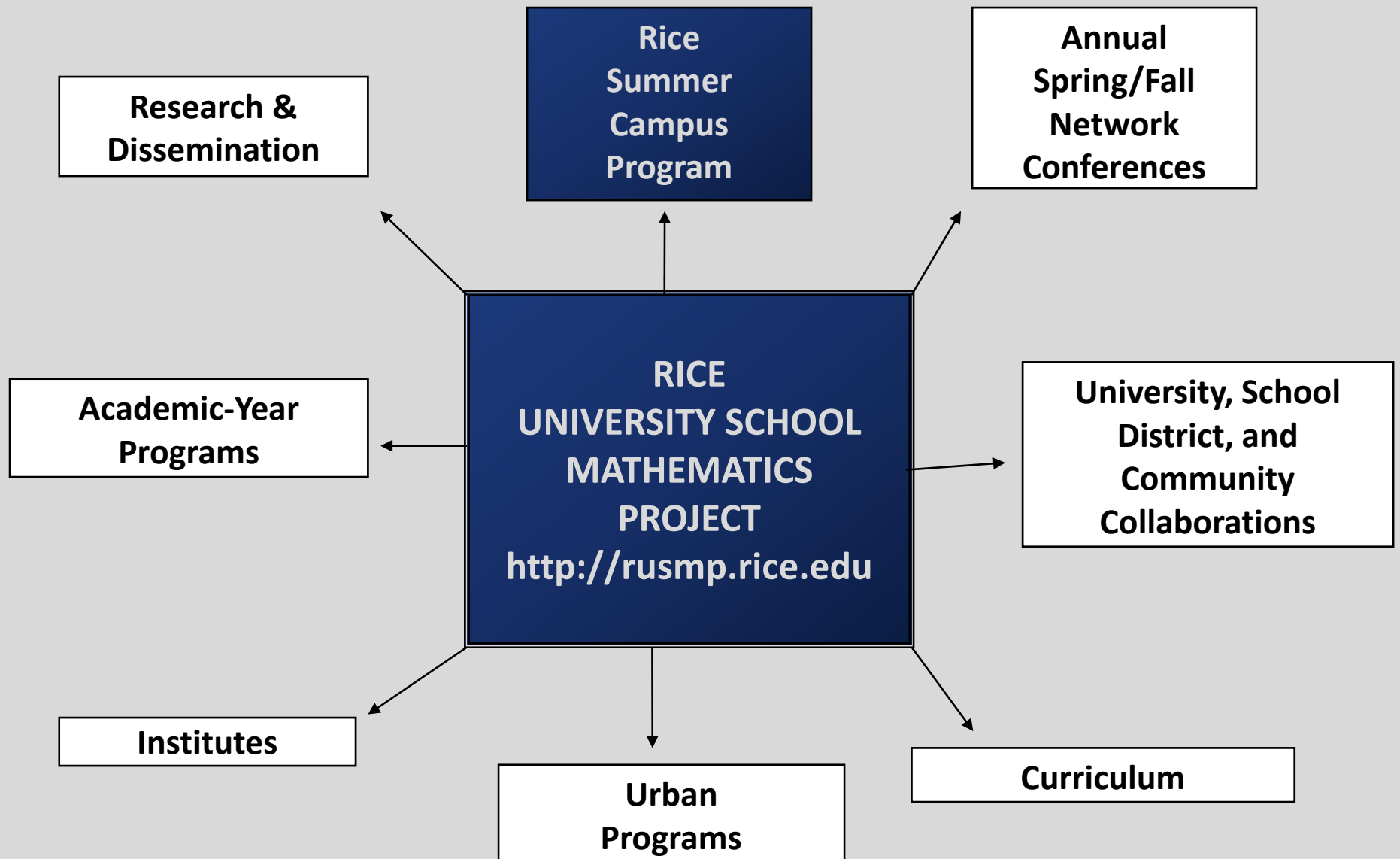


Goals

- 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



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RUSMP master teachers



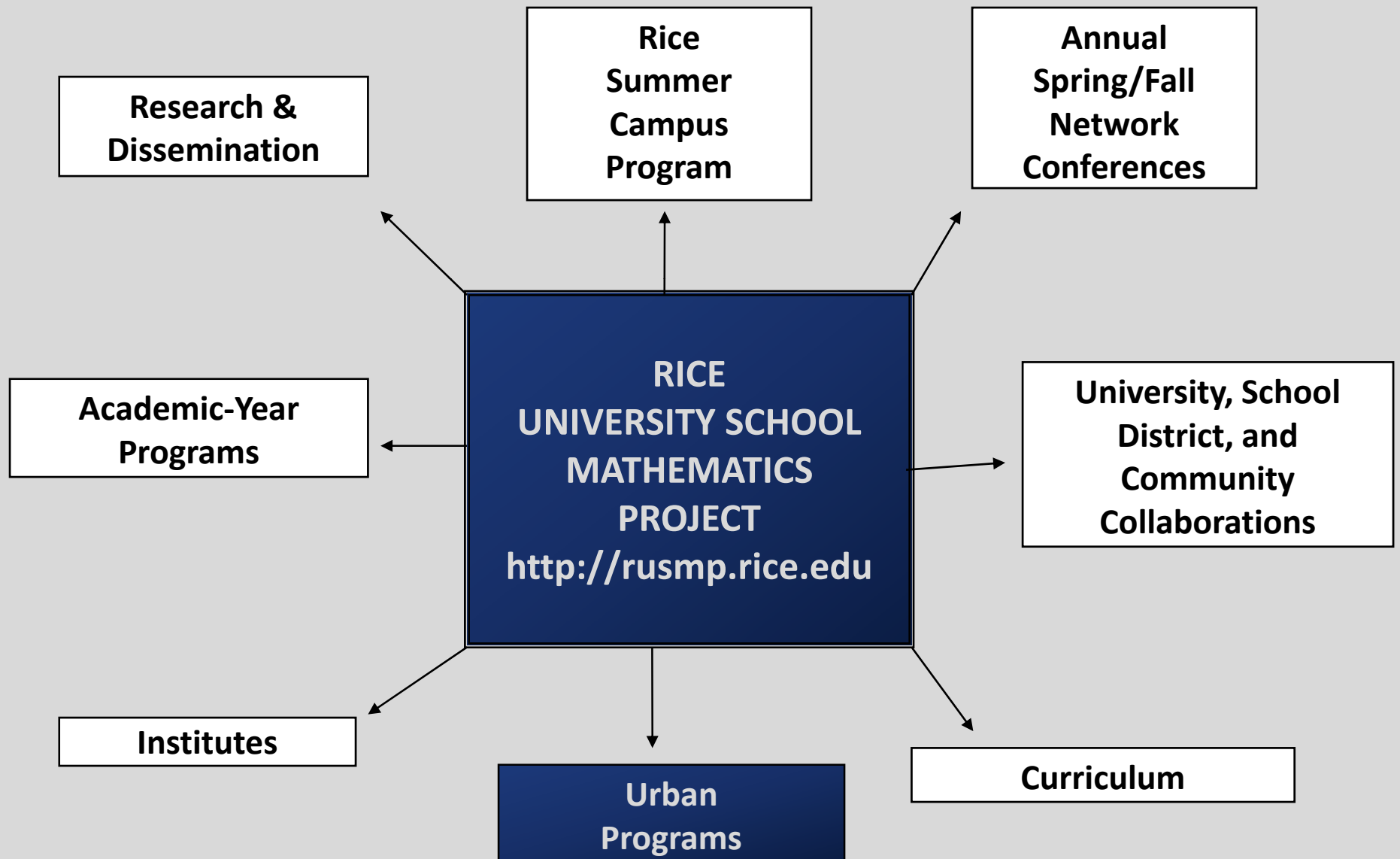
Mathematics content
and pedagogy



Curriculum development



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RUSMP support teachers



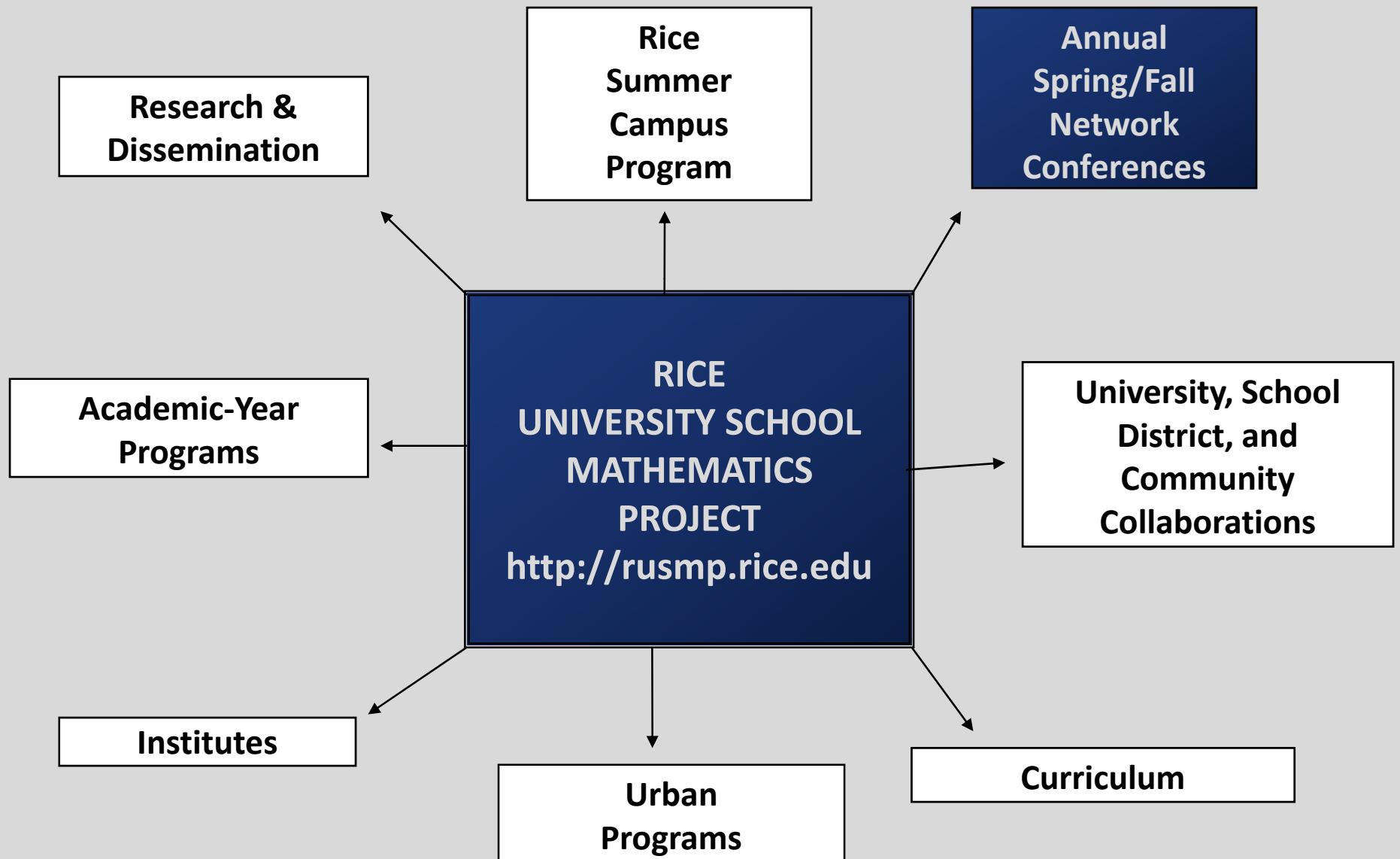
Summer program for
students



Collaborative planning

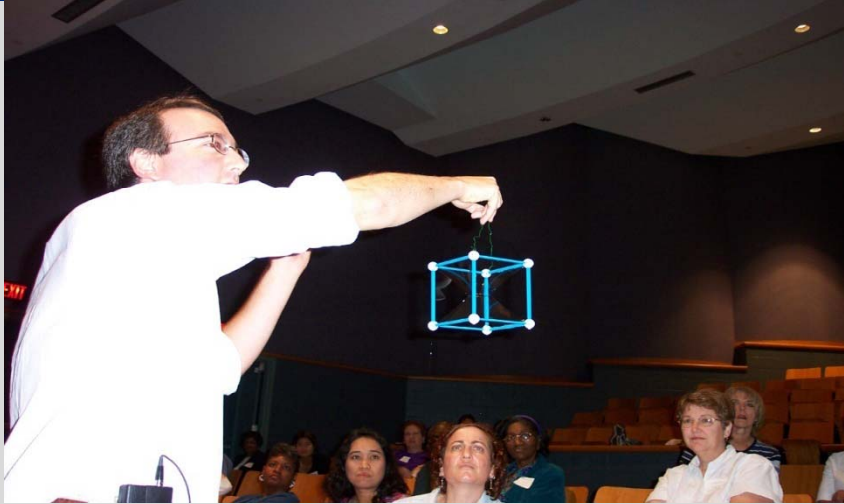


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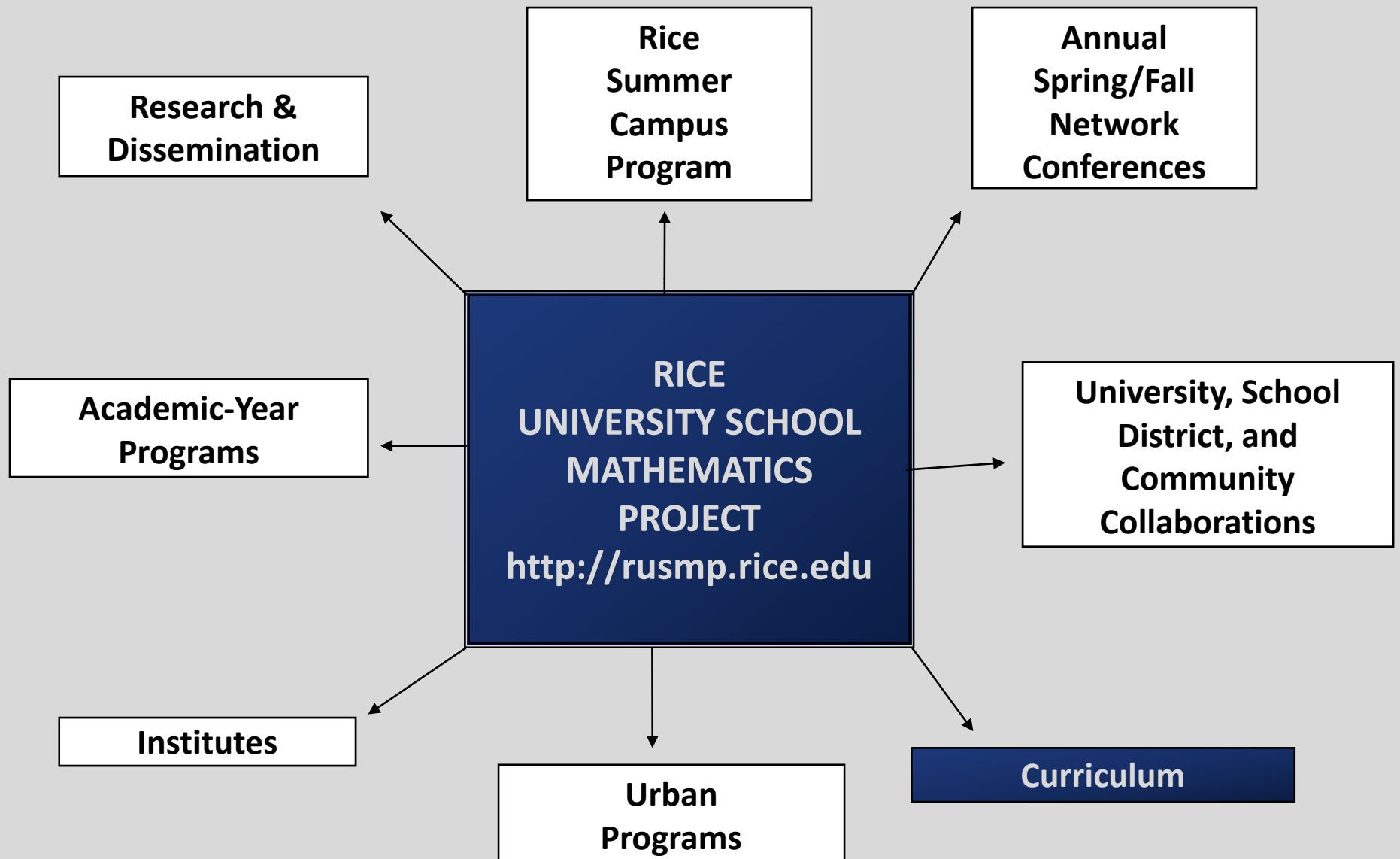
Keynote presentations from
distinguished mathematicians and
educators

Activities led by RUSMP alumni,
master and support teachers





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RUSMP Learning Plan

Exploratory Activities	Concept
Concept Development Activities	Materials and Resources
Procedural Knowledge and Basic Facts	Originality and Creativity <i>Student Products</i> Written Verbal Kinesthetic Visual
Assessment	
Related TEKS	

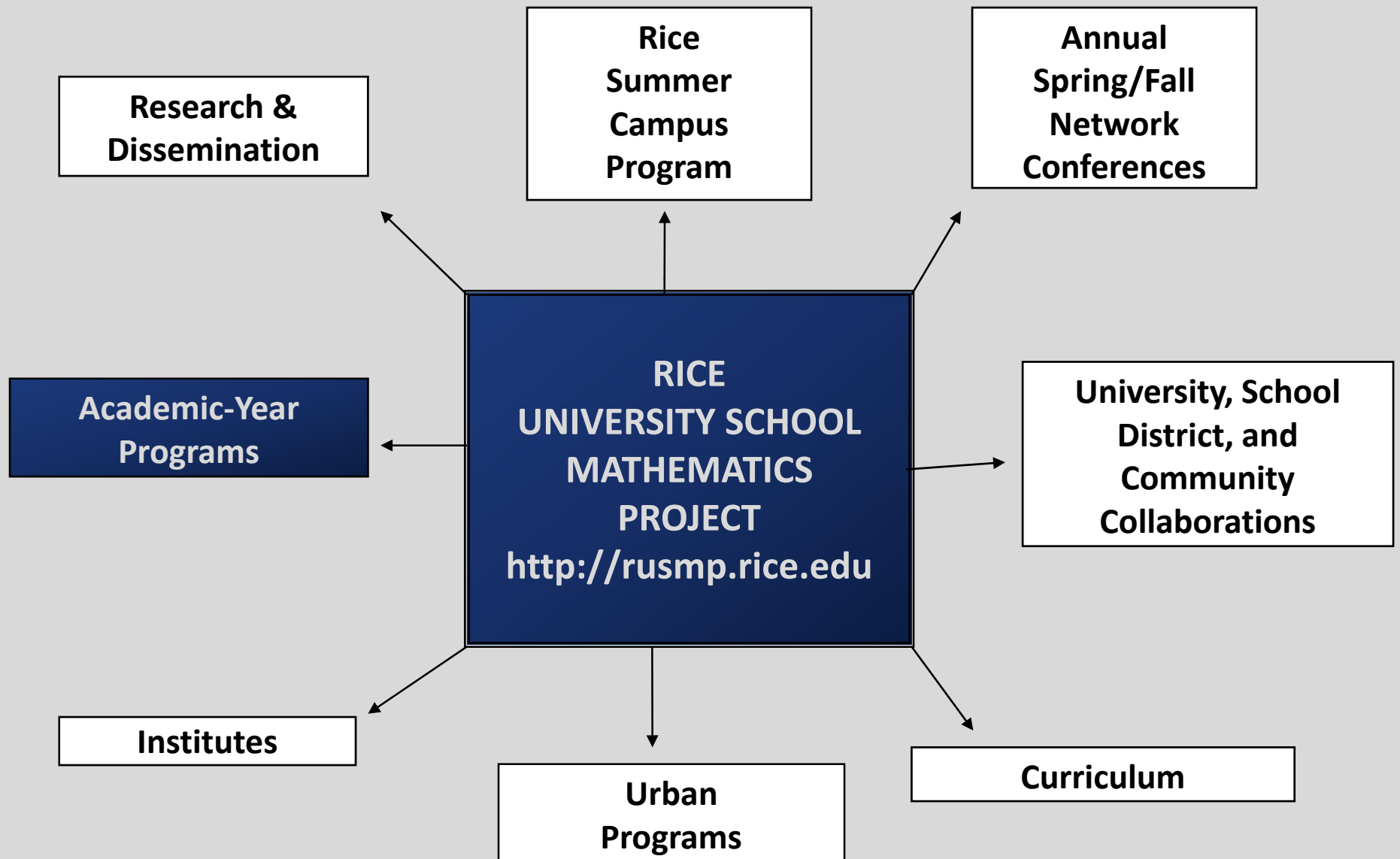


The RUSMP Geometry Module

- 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



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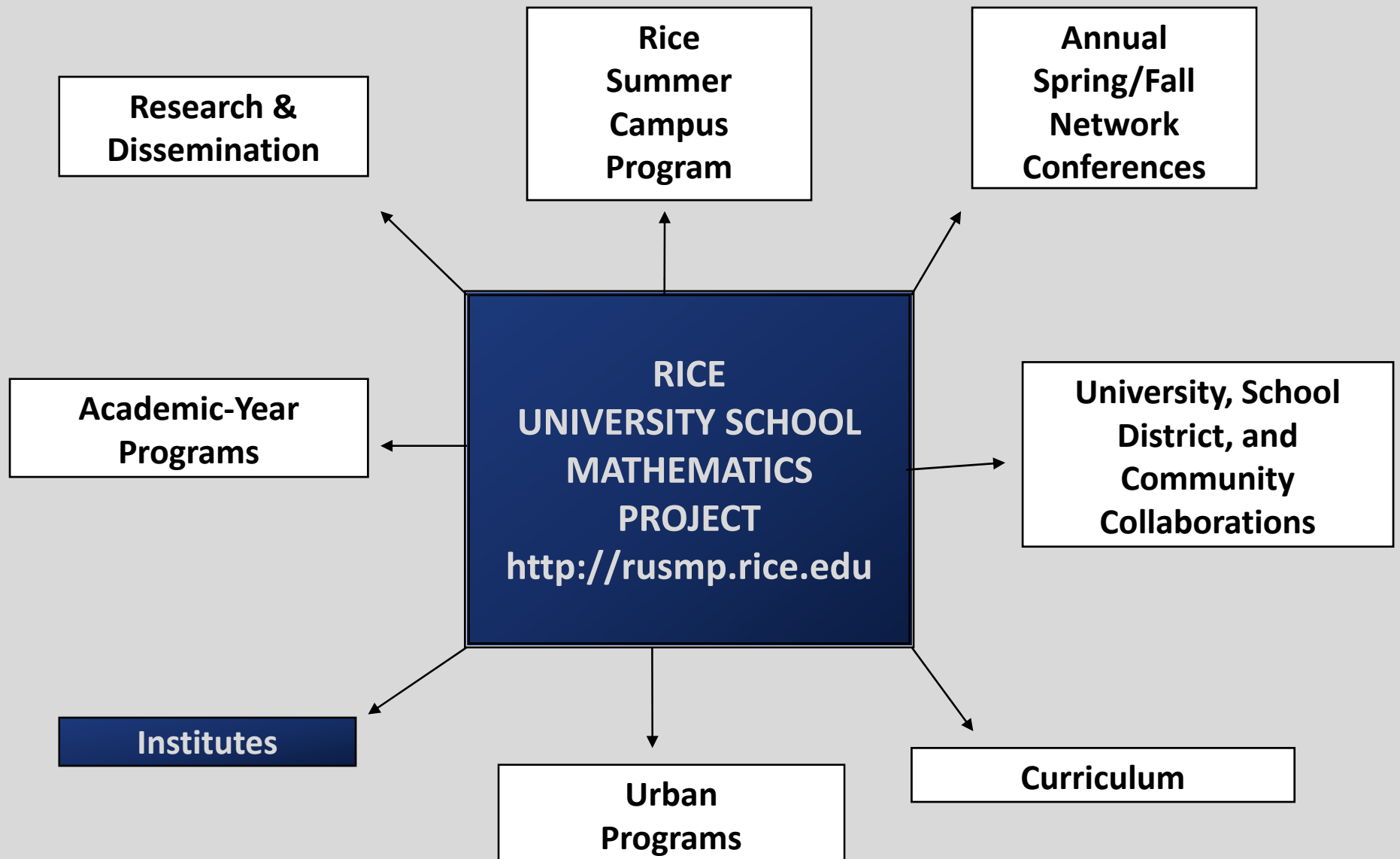


Academic-Year Programs





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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)



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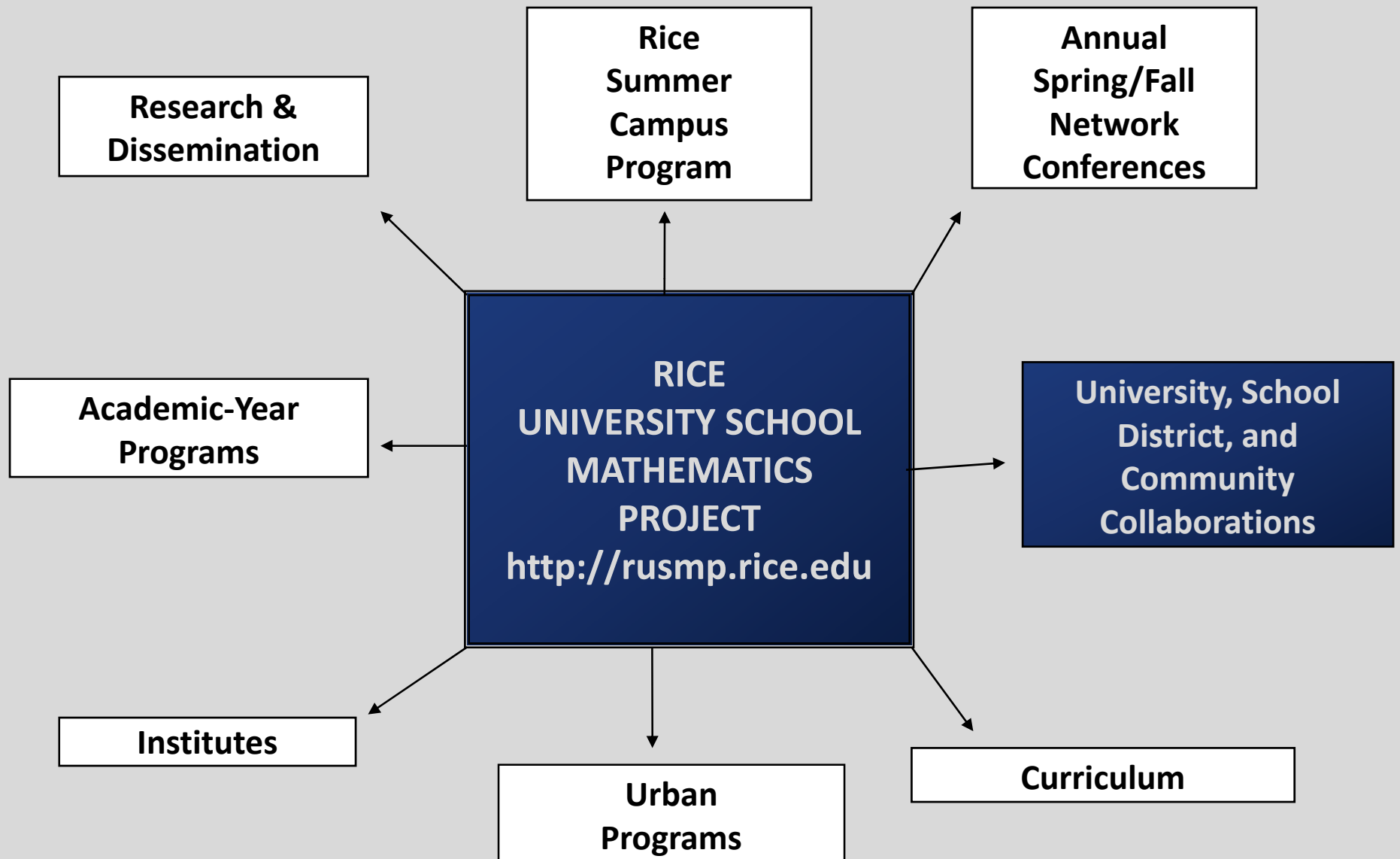


Mathematics Leadership Institute





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Collaborations

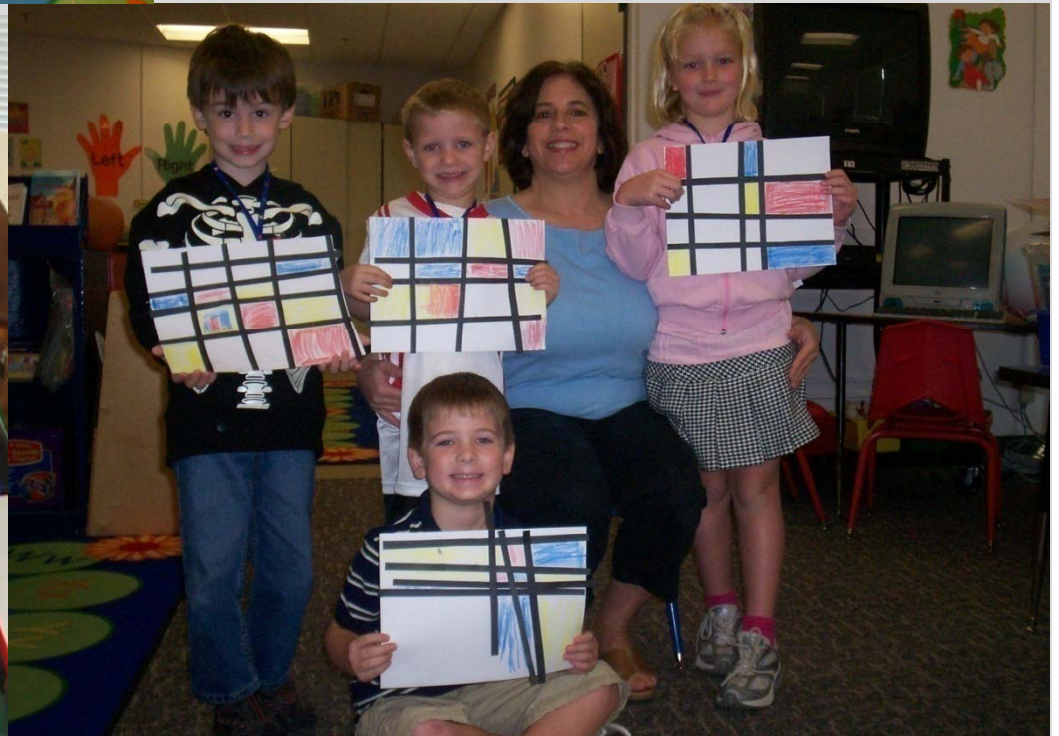




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Collaborations





Collaborations with CIA

- Academic-Year Courses
- Mathematicians in Motion: Best Practices in Algebra 1
- Math-A-Letics
- ATeaMS
- CBAs
- HAPG Development



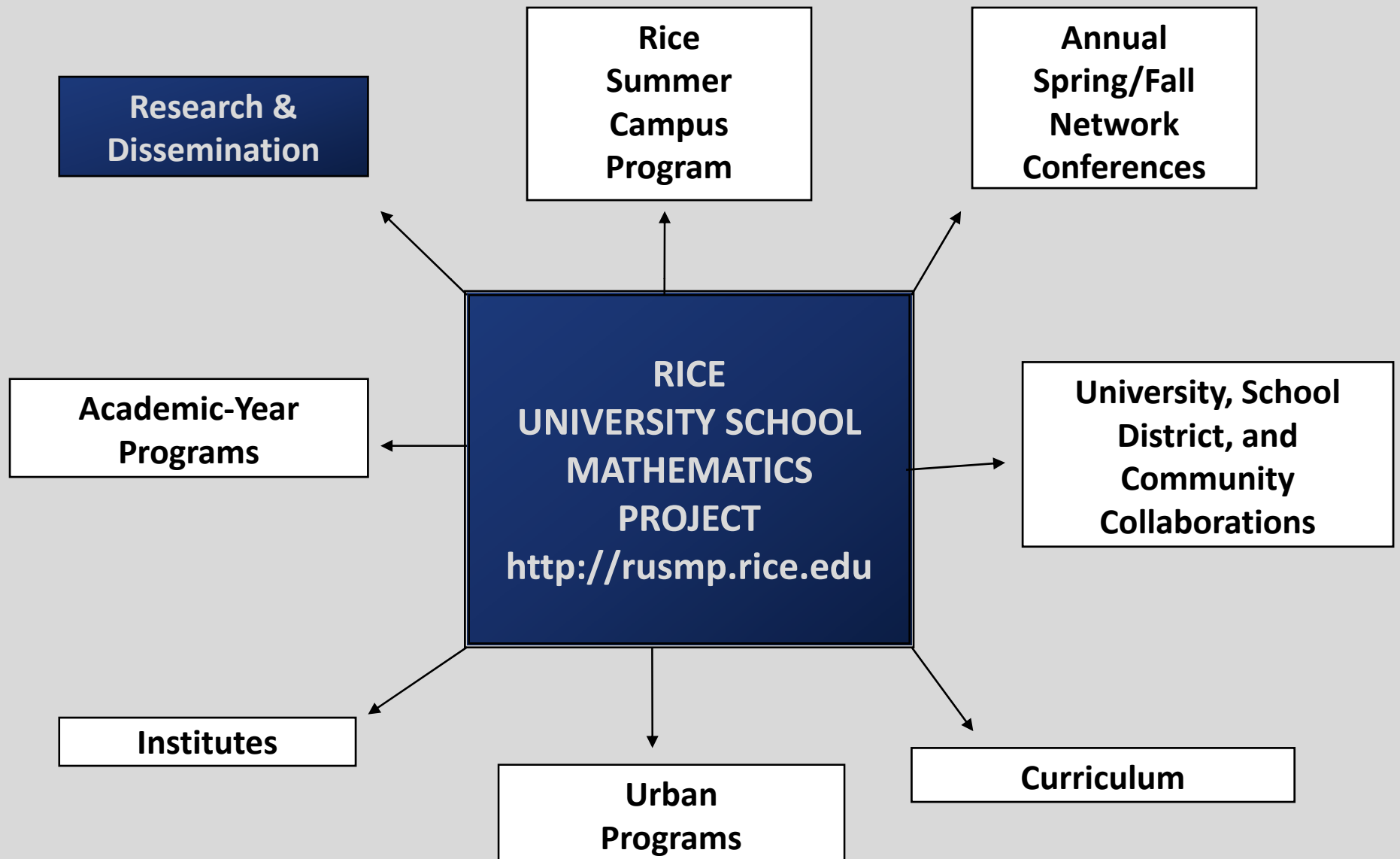
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Project GRAD





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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



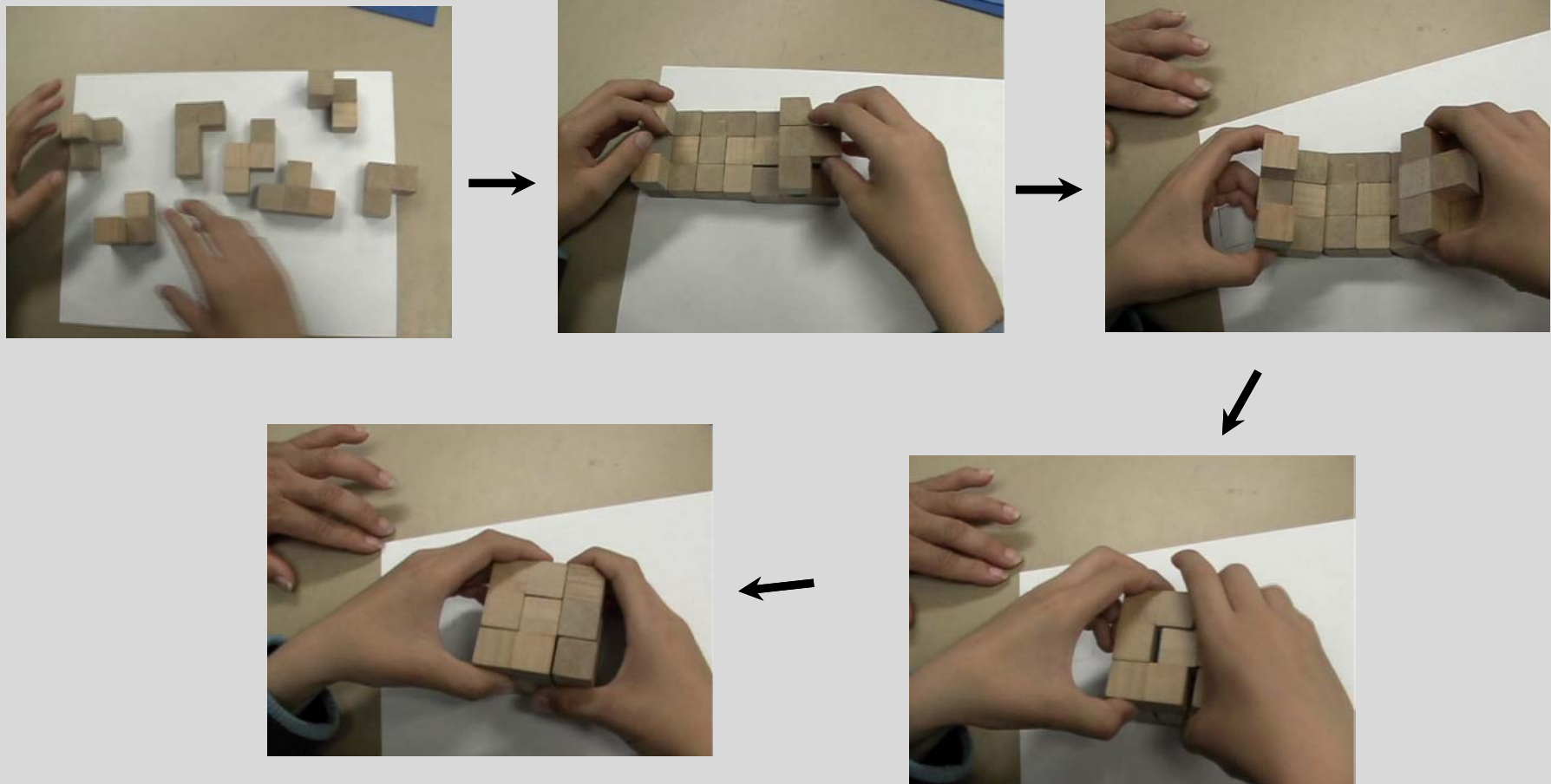
Mathematics Leadership Institute Impact

- Increased student achievement on TAKS
- Improved school-level instructional support
- Expanded school-level mentoring and team leadership



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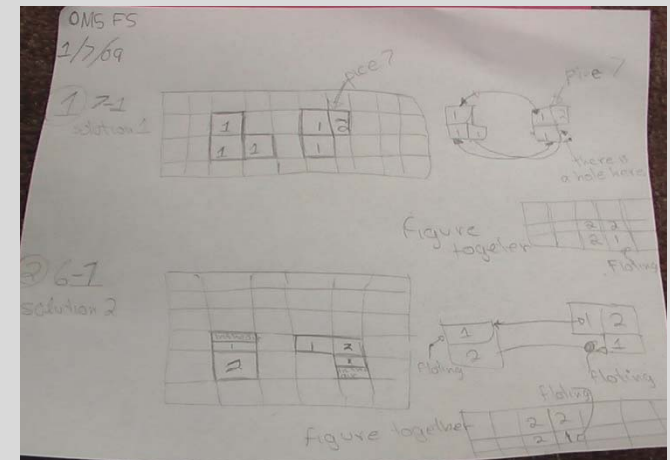
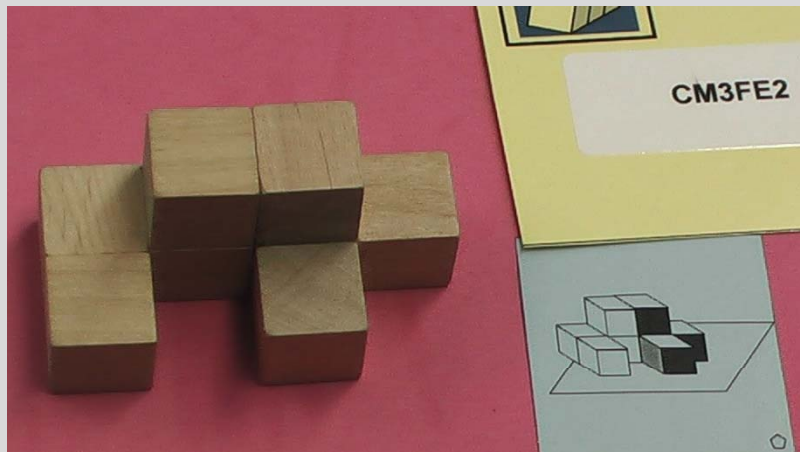
Wharton ES Spatial-Visualization Research Project





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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), and *What Works in the High School* (2002).



Recognition of RUSMP

Cited as a model program for its response to teacher preparation and teacher quality in Texas in *Advanced Mathematics Educational Support: Support, Recommendations, and Resources for Facilitating Collaboration, Between Higher Education Mathematics Faculty and Texas Public High Schools* (2003).



Recognition of RUSMP

Highlighted in the report, *Identifying High Performing Texas Schools and Their Methods of Success in Middle School Math and Algebra I End-of-Course Performance* (2001), written for the Texas Education Agency.



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