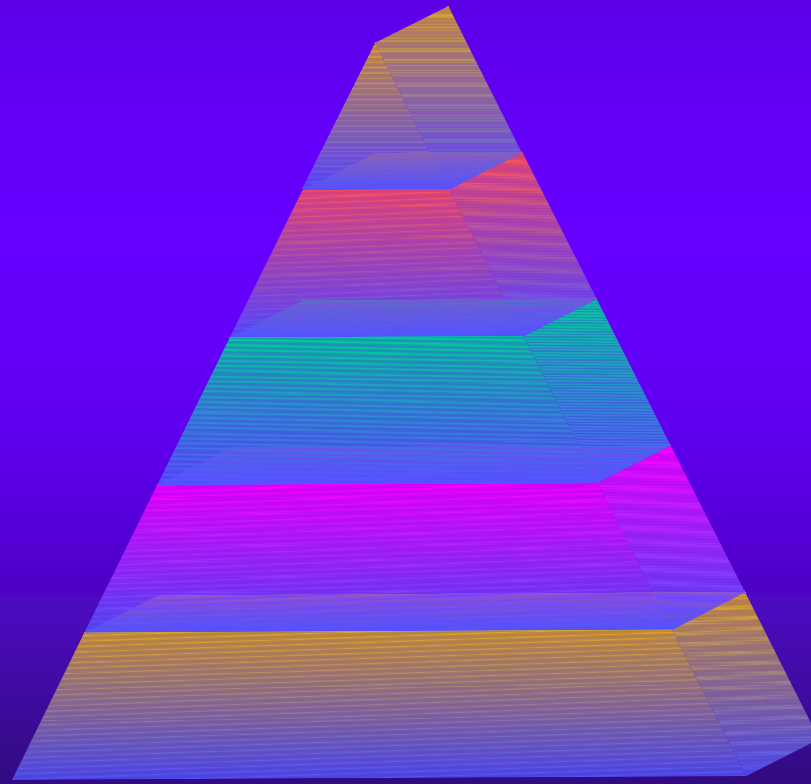


Partnership for Reform in Science and Mathematics



P R I S M



The Target

Example—Baseline Data

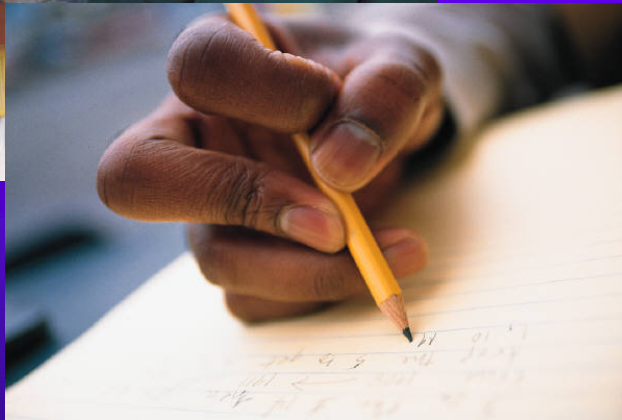
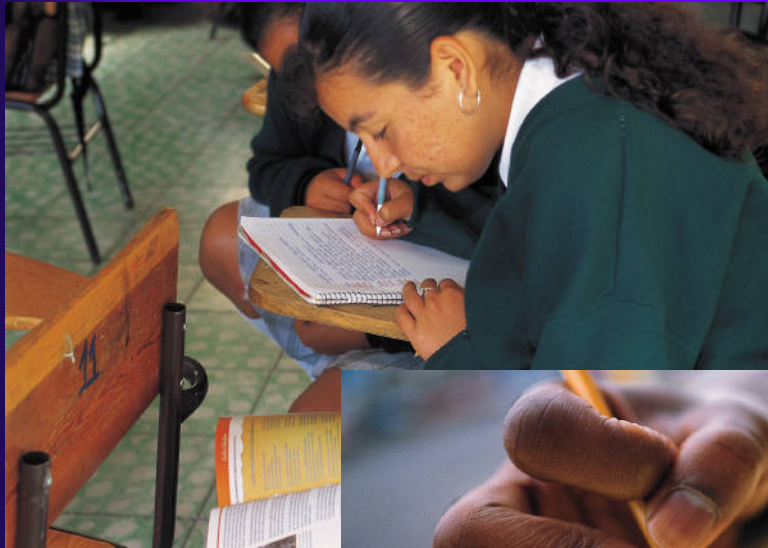
◆ PRISM Middle Schools

- 34% of 8th graders DO NOT meet the standard in mathematics on the Georgia criterion referenced test
- 24% of 8th graders DO NOT meet the standard in science on the Georgia criterion referenced test

◆ Georgia's Middle Schools

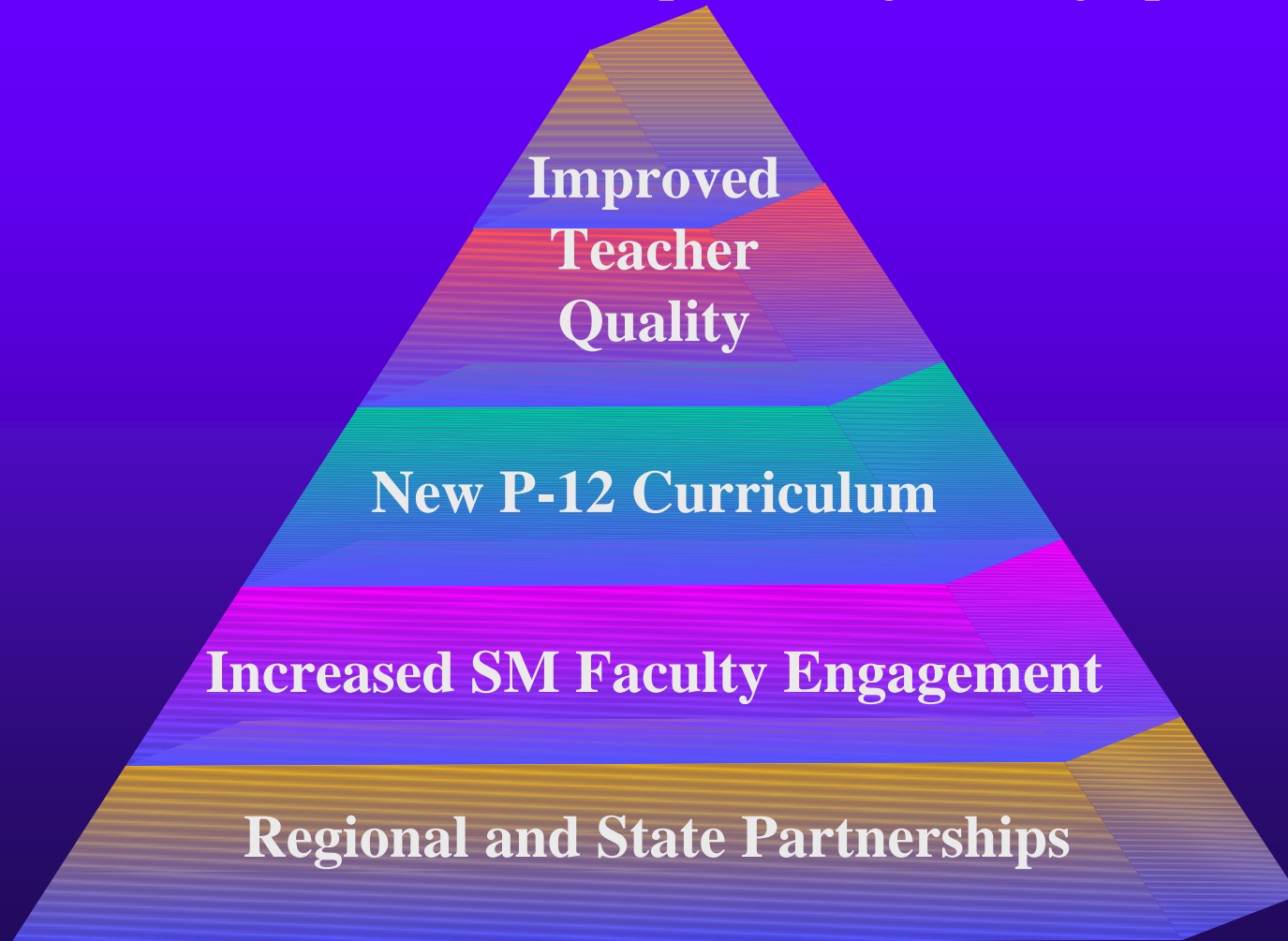
- 45% of Georgia's 8th graders score below basic on NAEP test in mathematics (2000)
- 48% of Georgia's 8th graders score below basic on the NAEP test in science (2000)

**170,172 P-12 Students
in Urban and Rural Public
Schools in Georgia**



The Goals and Strategies

Goals → **Raise Expectations & Achievement for All Students and Close Achievement Gaps Among Demographic Groups**



The Goals and Strategies

**Raise Expectations & Achievement for All Students and
Close Achievement Gaps Among Demographic Groups**

Implementation:
Changes in
Practice & Policy

Scholarship:
What Works, For Whom
Under What Conditions,
Why





Partnerships

PRISM

- ◆ Four existing regional P-16 councils
 - P-12 partners
 - Approximately 10% of public school population
 - Demographically representative of state
 - Higher education partners
 - 44% of teachers prepared in University System of Georgia
- ◆ State partners
 - Georgia Department of Education
 - University System of Georgia

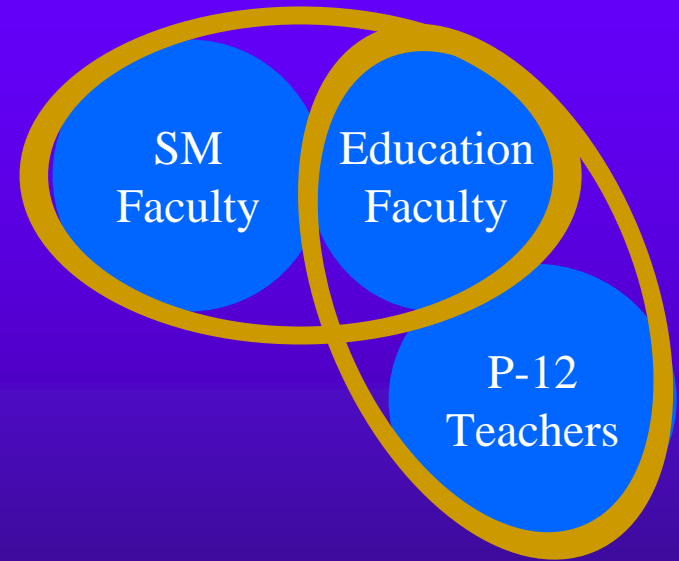


Increased SM Faculty Engagement

BASELINE

◆ Regents' *Principles*

- Policy for teacher preparation
- Shared governance between colleges of arts & sciences and education
- Stronger content preparation
- Partner school network between colleges of education and P-12 schools
- Professional component of teacher preparation focused on set of performance outcomes



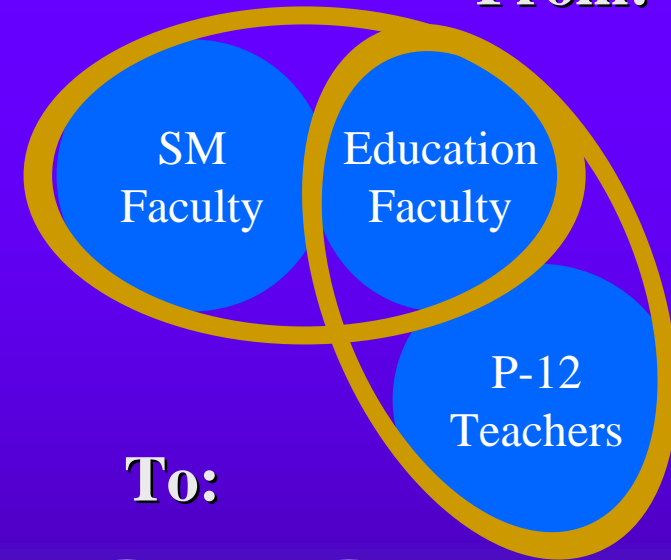


Increased SM Faculty Engagement

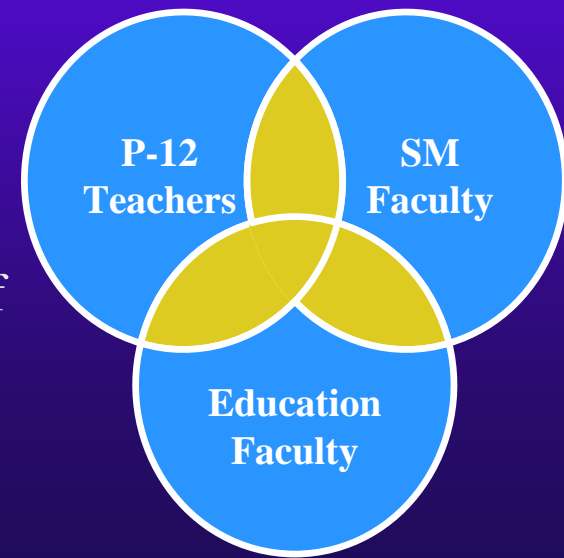
PRISM

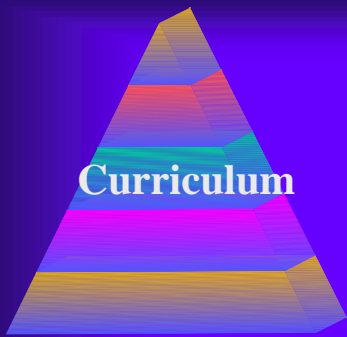
- ◆ Three-way partnership
 - Governance of teacher preparation
 - Scholarship
- ◆ SM engagement in teacher professional development
 - SM Consortia—disciplinary courses
 - Learning communities
- ◆ SM engagement with colleges of education
 - Institute on the Teaching and Learning of SM

From:



To:





P-12 Curriculum

BASELINE

◆ PRISM High Schools

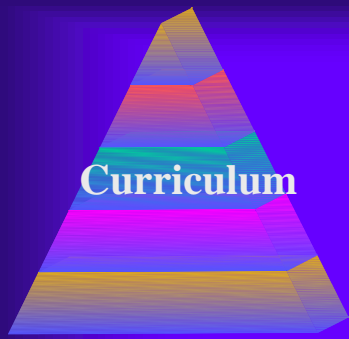
- 44% DO NOT complete SM college preparatory sequence
- 30% DO NOT pass the Science portion of the GA High School Graduation Test (28% statewide)
- SAT Quantitative score is 478—13 points below the Georgia average and 38 points below the national average
- 20% of graduates require remediation in college

◆ GA Quality Core Curriculum

- Grade of “F” in science; “B” in mathematics

◆ Low parent, educator, and community expectations for students





P-12 Curriculum

PRISM

- ◆ Raise SM expectations for all students
 - Set SM standards Pre-School through Level 14 to bridge gaps
 - Revisit curricular tracking
 - Conduct public awareness campaign
- ◆ Increase opportunities for gifted SM high school students
 - Increase access to college courses
 - Involve them as Student Interns in teaching other students
- ◆ Increase success in SM of college freshman
- ◆ Increase student engagement in learning SM through changing how SM are taught at all levels (P-16)



Teaching Quality

BASELINE

◆ Georgia's Schools

- Elementary in-service teachers have “general” certificate without concentrations in SM
- Out-of-field SM teaching
 - 29% middle school teachers
- Teacher attrition
 - 30% of teachers (all fields) leave in first five years
- 78% of teachers are white

◆ University System Teacher Preparation

- Regents' Principles
 - Mathematics concentration for pre-service elementary school teachers
 - SM concentrations for middle school teachers
 - BS in SM disciplines for high school teachers
- Prepared only about 20% of new teachers hired in 2002



Teacher Quantity & Diversity

PRISM

◆ Working conditions in schools

- State policies
 - Salary
 - Teacher promotional opportunities
- Teacher Incentives Forum
- Georgia’s Leadership Institute for School Improvement
 - PRISM districts given priority

◆ SM targeted in Teacher Recruitment Initiative

- Companion to PRISM

◆ Potential candidate pool

- More diverse students complete rigorous SM courses in high school
- Changed instructional practices in collegiate introductory SM courses

Student Intern Program:
Interns (co-teaching labs)
develop interest in
considering “teaching” as
career choice



Teacher Preparation

PRISM

◆ Regents' Principles

- Science concentration for pre-service elementary teachers
- Verification of sufficient content knowledge

◆ Consistency in modeling instructional practices

- Used in content courses
- Taught in colleges of education
- Practiced in schools

**Center for Proficiency in Learning
and Teaching Mathematics—
University of Georgia**

Institute on the Teaching & Learning of SM

- ◆ Learn best practices in the learning and teaching of SM
 - Introductory courses
 - SM concentrations
 - Courses in the major
- ◆ Learn to model teaching in a standards-based environment—a model that pre-service teachers will follow when they begin teaching in the schools



Teacher Professional Development

PRISM

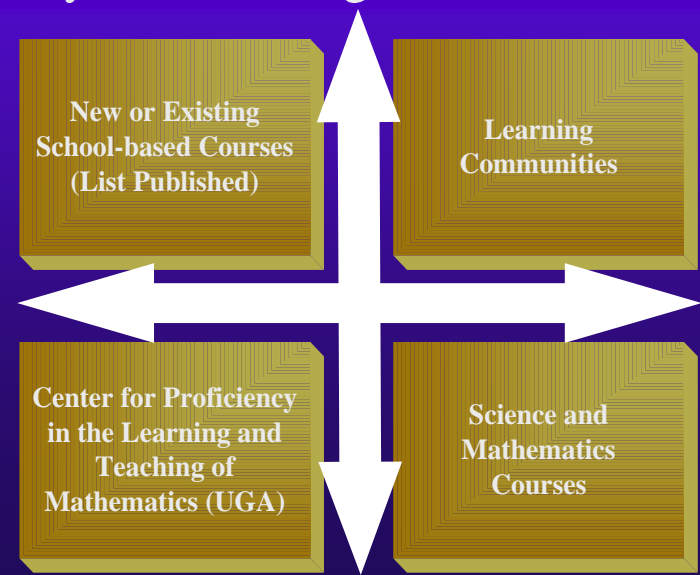
School Level

Learning Communities

- ◆ **Start with summer workshop with monthly meetings throughout year**
 - Inquiry process, active learning
 - School-based needs assessment
 - Student course-taking patterns
 - Plan for improving SM achievement
 - Plan serves as context for customized teacher professional development
- ◆ **Annual Conferences**
 - Share work with colleagues in other learning communities

Customized Teacher Professional Development

- ◆ Self-assessment in relation to a set of performance outcomes
- ◆ Each teacher responsible for meeting outcomes
- ◆ May do so through:





P-16 Professional Development

PRISM

Separate Programs

- ◆ P-12 teachers of SM
 - SM programs
 - School or regional courses
- ◆ SM faculty
 - Department focused
 - Interdisciplinary workshops
 - Discipline-based professional networks
 - Center for Proficiency in the Learning and Teaching of Mathematics

P-16 Faculty Together

- ◆ Learning communities
 - School
 - District
 - Region

Incentives

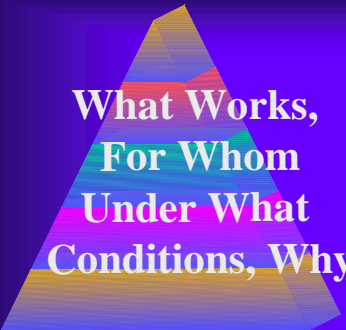
- ❖ Initially—released time, stipends, materials for support, recognition
- ❖ Longer term
 - Changes in reward systems
 - Recognition
 - Professional pride

Teaching
Quality

P-16 Professional Development

PRISM





What Works,
For Whom
Under What
Conditions, Why

Scholarship

PRISM

◆ P-16 learning communities

- Build scientifically-based knowledge
 - Taught to pre-service teachers
 - Informs practice in school classrooms
- Bridge 3 discrete realms
 - Knowledge building
 - Teacher professional knowledge
 - Teacher craft knowledge

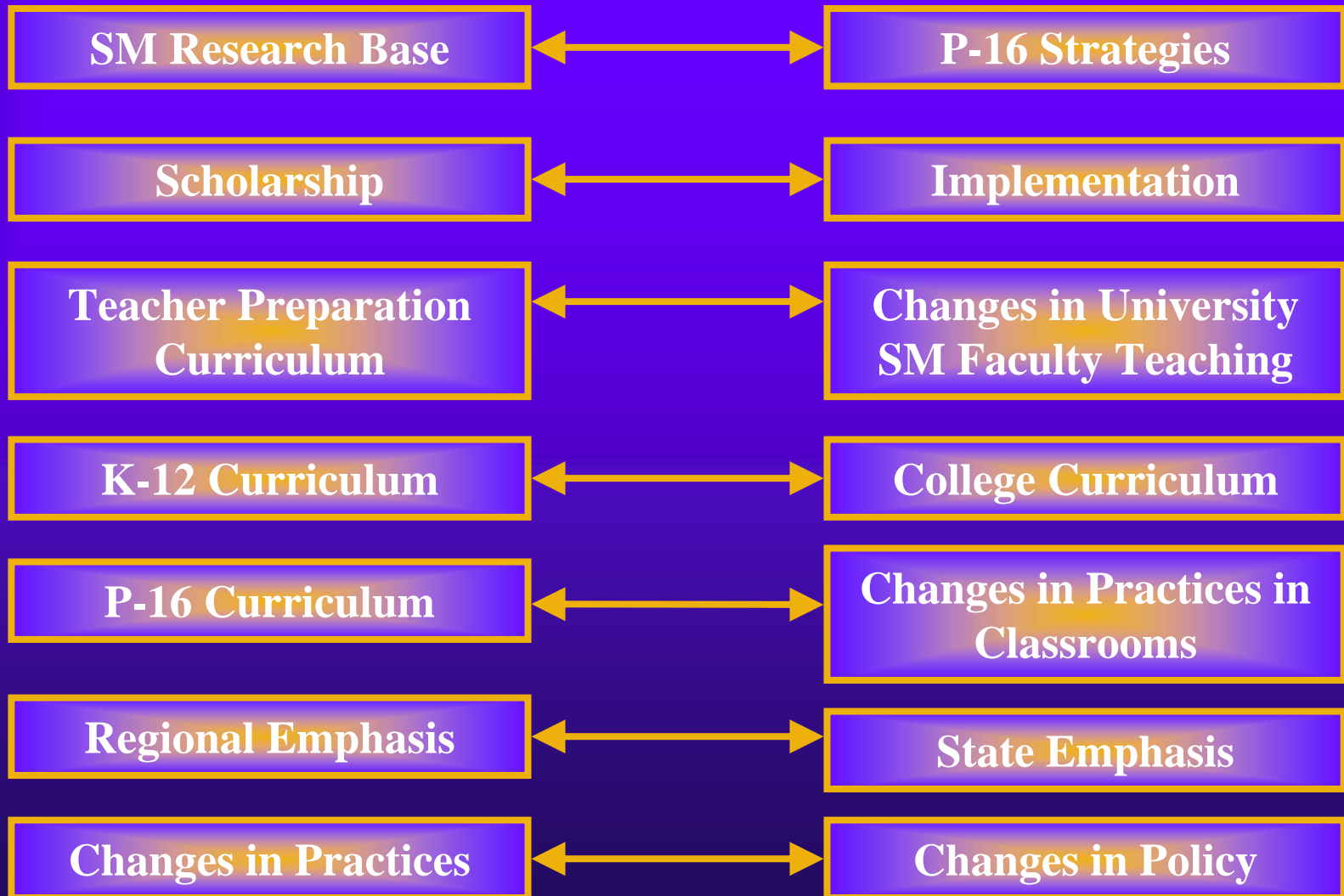


Regional
P-16 Learning
Communities



How Are Our Strategies Unique?

PRISM





Our Readiness and Our Challenges

PRISM

Our Readiness

- ◆ Compelling vision
- ◆ Commitment of partners to
 - Achieve goals
 - Stay the course
 - Learn from one another
- ◆ Distributed leadership
- ◆ Understanding of research base and P-16 strategies

Our Challenges

- ◆ Bridge cultures
 - School-college-university
 - Disciplinary-education
 - Institutional-state
- ◆ Develop incentives and reward structures
- ◆ Build time for partnership into workday
- ◆ Deepen partnership at the state level

USG Chancellor
Thomas Meredith



Chancellor Thomas Meredith

Superintendent Kathy Cox

Commitment of our Leaders



How Are Our Strategies Unique?



**Student
Achievement**



Student Achievement

Student Achievement



**Student
Achievement**

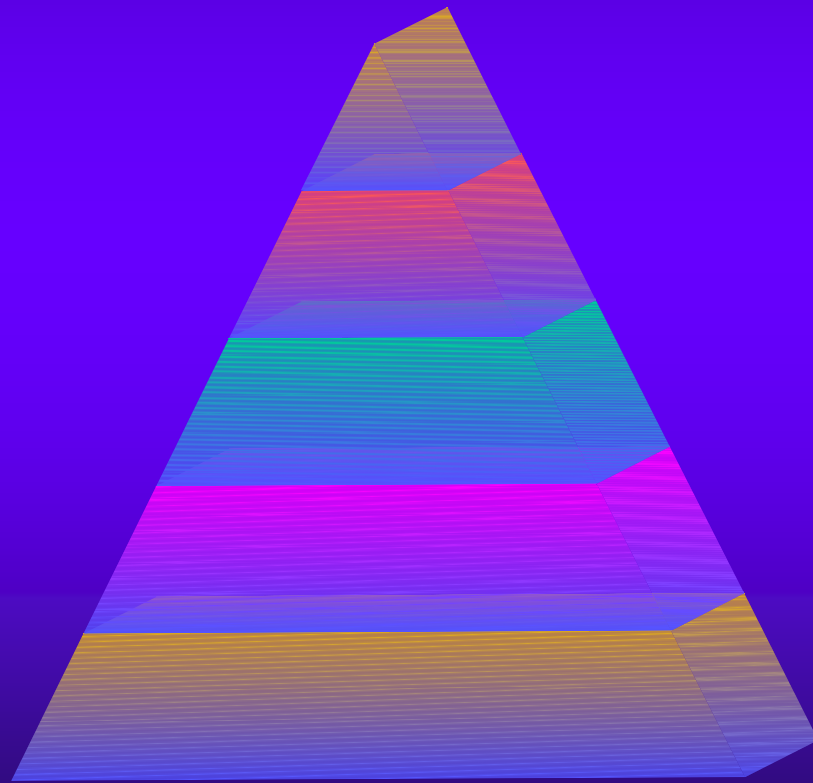


We are relentless in our focus



Student Achievement

Partnership for Reform in Science and Mathematics



P R I S M