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Interdisciplinary STEM Teaching & Learning Conference (2012-2019)

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The National & State Context of STEM Education: Past, Present, and Future

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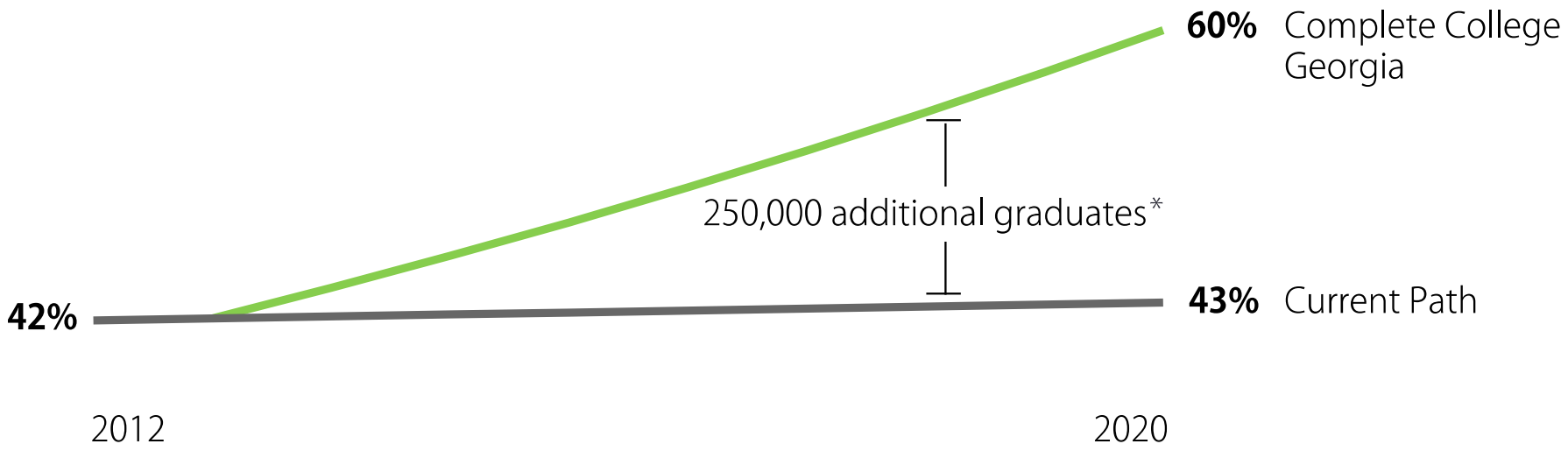
An Ongoing National Challenge

2012	Engage to Excel: Producing One Million College Graduates with Degrees in Science, Technology, Engineering and Mathematics
2011	Complete College Georgia
2007	Rising Above the Gathering Storm
2004	The Engineer of 2020: Visions of Engineering in the New Century
2001	Federal No Child Left Behind Act
1983	A Nation At Risk: The Imperative for Educational Reform

By 2020, it's anticipated that 60% of jobs will require some form of higher education (certificate, associate's, bachelor's).

Currently, 42% of our young adults (age 25-34) qualify.



Complete College Georgia

*Projected need, assuming current graduation levels are maintained, and population change is met.

100 Georgia Public 9th Graders

56 Graduate High School

24 Start a *4-year* College

19 Become Sophomores

6 Graduate Within Time

13 Start a *2-year* College

6 Become Sophomores

3 Graduate Within Time

91% Loss

STEM *Education* is Critical

PCAST's conclusion:

1,000,000 STEM graduates → 10 years

Currently, of all intended STEM majors:

40 percent → complete degree

Georgia's commitment:

expanding access and success through innovative practices

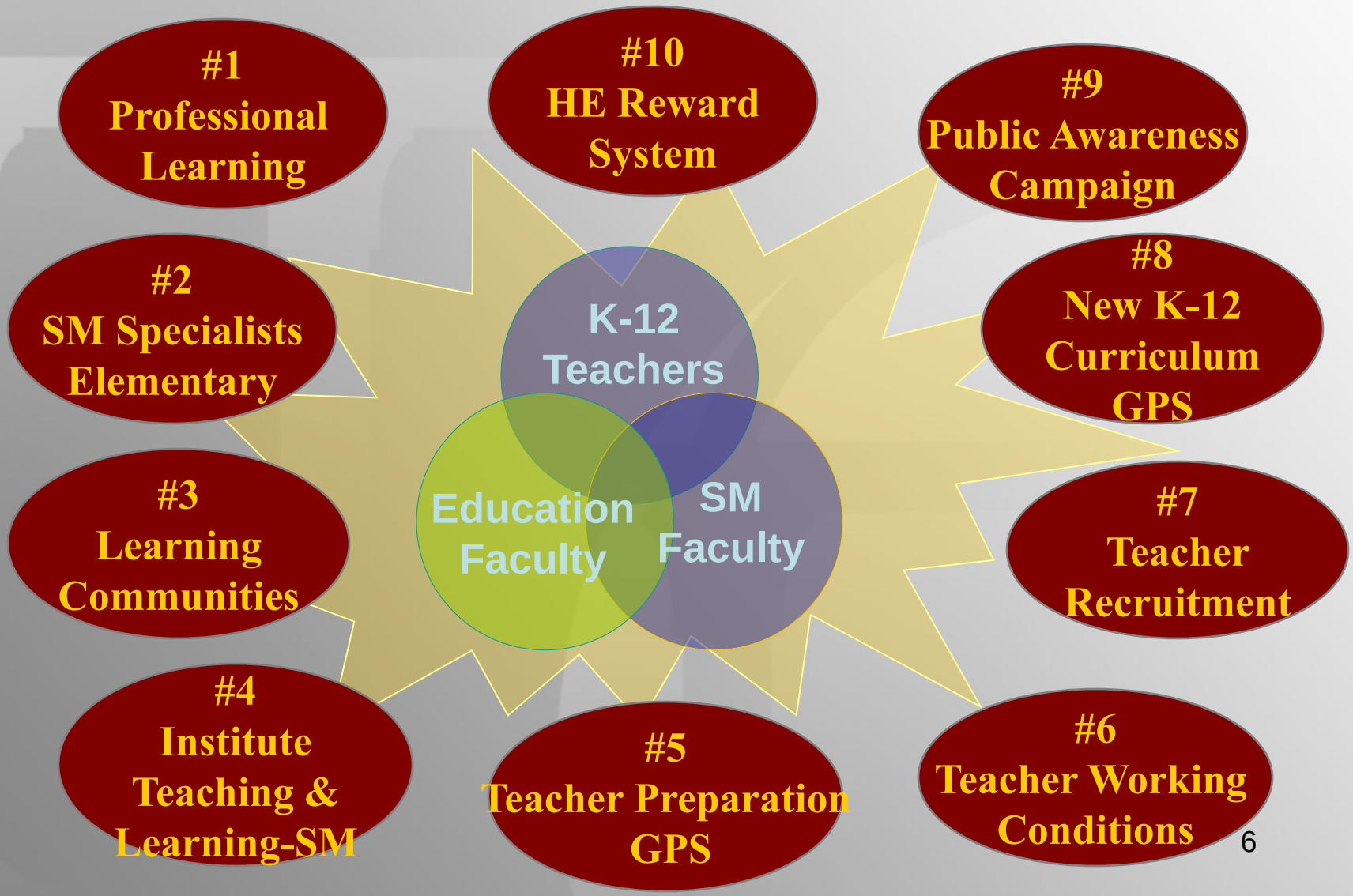
Setting the Stage

- HOPE Scholarship (1993)
- Regents' P-16 Initiative (1995)
- Regents' Principles for the Preparation of Educators for the Schools (1998)
- The Partnership for Reform in Science and Mathematics-- PRISM (2003)

office of STEM education

science technology engineering mathematics

The University of Georgia



8.3.15 Enhancing Teaching and Learning in K-12 Schools and USG Institutions

The BOR recognizes the value of USG faculty engagement in the effort to continuously improve teaching and learning in K-12 schools and USG institutions.

- **Work in K-12 Schools**

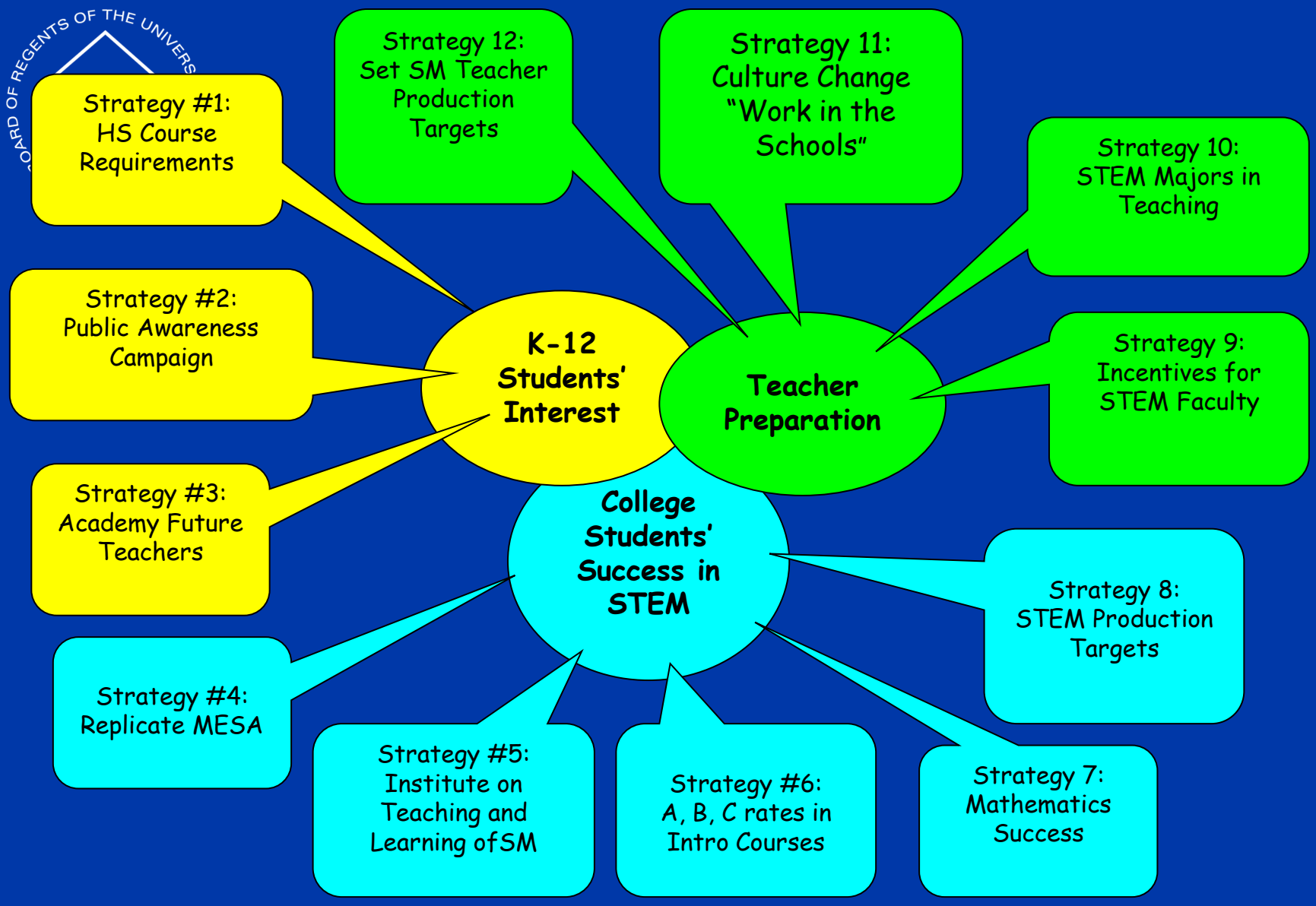
USG institutions **will support and reward faculty who participate in significant and approved efforts to improve teaching and learning in K-12 schools, including teacher preparation,** through decisions in promotion and tenure, pre-tenure and post-tenure review, annual review and merit pay, workload, recognition, allocation of resources, and other rewards.

- **Work in USG Institutions**

USG institutions will **support and reward faculty who participate in significant efforts to improve teaching and learning in USG institutions** through decisions in promotion and tenure, pre-tenure and post-tenure review, annual review and merit pay, workload, recognition, allocation of resources, and other rewards.

USG STEM Initiative I

- Launched by Chancellor as a Presidential Initiative (2007-2011)
- Three Goals:
  - Increase the number of K-12 students interested in STEM
  - Increase the number of students in college who pursue the STEM disciplines
  - Increase the number of teachers prepared in science and mathematics



"Creating A More Educated Georgia"

Key Programs & Outcomes

- Academy of Future Teachers
  - Attract talented HS students to teaching profession
  - FY 2008 – FY 2010: 6 Institutions
  - 334 High School students participated in AFT

Key Programs & Outcomes

- Project MESA (Mathematics Engineering Science Achievement)
  - Increase retention of underrepresented groups in STEM fields at 2-yr institutions
  - 95.8% increase in participation (119 to 233)
  - Increased retention rate
  - Increase in the number of students transferring to 4-yr institution

Key Programs & Outcomes

- Structured Mini-Grant Program
  - Faculty collaboration in K-16 Learning Communities & SoTL activities
  - Work to increase success and retention in introductory STEM courses
  - FY 2009- 80 Mini-grants funded
  - FY 2010- 57 Mini-grants funded