Meeting the Challenges of Improved Post-Secondary Education in the Mathematical Sciences

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President’s Council of Advisors on Science and Technology
Washington, DC
July 18, 2013
NSF-sponsored study of

**Characteristics of Successful Programs**

**In College Calculus**

Calculus Surveys
(administered both start and end of Fall 2010)

- 213 Colleges and Universities
- 502 Instructors representing
  - 663 Calculus I classes
  - 26,257 Students
- 14,184 Students

Case study visits to 16 “successful” programs
(Fall 2012)

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High School Calculus Experience of Research University Students in Calculus I

- No calculus in High School: 30%
- AP exam, < 3: 15%
- AP exam ≥ 3: 26%
- Calculus in High School, no AP exam: 29%

Data from CSPCC Study
Almost 700,000 students studied calculus in high school in the US this past year.

Data from CBMS and College Board
Fall term enrollment in Mainstream Calculus II all post-secondary institutions (thousands)

50% increase, 2005 to 2010

Data from CBMS
50% increase in prospective STEM majors, 2005 to 2010
### Intended Career of Calculus I Students at Research Universities

- **Engineering**: 34%
- **Bio Sciences**: 31%
- **Physical sciences**: 5%
- **Math Sciences**: 1%
- **Comp Sciences**: 4%
- **Other**: 5%
- **Undecided**: 8%
- **Teacher**: 3%
- **Business**: 7%
- **Social Sciences**: 2%

*Data from CSPCC Study*