

Parallel Projects to Enhance our Understanding of Study Outcomes

College Board/SAT Outcomes
PECASE

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College Board/SAT Outcomes

- ◆ Challenge from OSTP
- ◆ Cooperation from College Board, particularly from Thanos Patelis, VP, Research and Analysis



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Sample

- ◆ 87,840 who graduated in June 2006 and attended post secondary institutions in the US for four years.
- ◆ 50% of fathers had at least a bachelors degree
- ◆ Attended 47 post secondary institutions
- ◆ Mean SAT-M= 585
- ◆ SAT_CR_M_W=1715
- ◆ 90th percentile: 700, 2040
- ◆ 95th percentile: 740,2120



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By STEM or Non-STEM Major

◆ Non-STEM

- Mean= 579, 1705;
- 90th : 700, 2030; 95th: 720, 2110

◆ STEM

- Mean= 638, 1802
- 90th: 740, 2090; 95th: 770, 2170
- Standard deviation larger for non-STEM



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Percentage of those in 90th and 95th Percentile who Completed STEM Degree

11% of the sample completed a STEM degree

SAT-M

- 90th percentile – 24.6%
- 95th percentile - 26.5%

Combined

- 90th percentile – 16.2%
- 95th percentile - 17.3%



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Future Exploration

- ◆ Expanded college participation to ensure representativeness.
- ◆ Exploration of other factors associated with selection of STEM majors in the College Board dataset.



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PECASE Pilot Survey



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What is PECASE?

- ◆ The Presidential Early Career Award for Scientists and Engineers (PECASE)
- ◆ In 1996, National Science and Technology Council (NSTC) commissioned to create award
- ◆ Sixteen agencies select a total of 100 awardees each year
- ◆ PECASE Award Winners receive:
 - Award presented by the President at The White House
 - Funding from their agency for up to five years to advance research

Source: www.nsf.gov/od/iaa/activities/pecase



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Why Did we Conduct a Study of PECASE?

- ◆ Allows us to look at young scientists beyond the college years and ask them to reflect on their high school experiences.



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PECASE Survey

- ◆ Looking at awardees from 2010-2012, 253 responses out of 300 across 16 agencies

Reported Gender:

- 51% Male
- 31% Female

- ◆ High School Education:

- 76% in U.S., 24% outside U.S.
- 72% attended a local public high school, 10% a selective science high school
- 26% attended after school/summer selective science program



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Early Influences: Parents & Mentors

◆ Parents in STEM:

- 42% at least one parent in STEM field
 - 64% father, 10% mother, 26% both parents

◆ Outstanding Pre-University Teachers:

- 74% or 187 Awardees

◆ Mentors in High School Years:

- 67% or 170 Awardees, nearly everyone cited teachers



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Role of Special Science Programs

- ◆ 78 (30.8%) of 253 respondents participated in some form of selective science program during high school, 24 of whom attended a specialized SMT school
- ◆ Participation in Summer/After School Selective Science Programs was associated with:
 - Earlier development of:
 - Interest in science and interest in research as career
 - More likely to have:
 - Mentor in high school years and outstanding pre-university teacher
 - Other factors:
 - STEM parents, type or location of school, gender not significant



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Future Exploration

- ◆ 212 out of 253 (84%) of the awardees were willing to be contacted again.
- ◆ We will explore their answers further with regard to influential experiences in high school in a future study.



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Social and Behavioral Science Study and general policy implications

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