



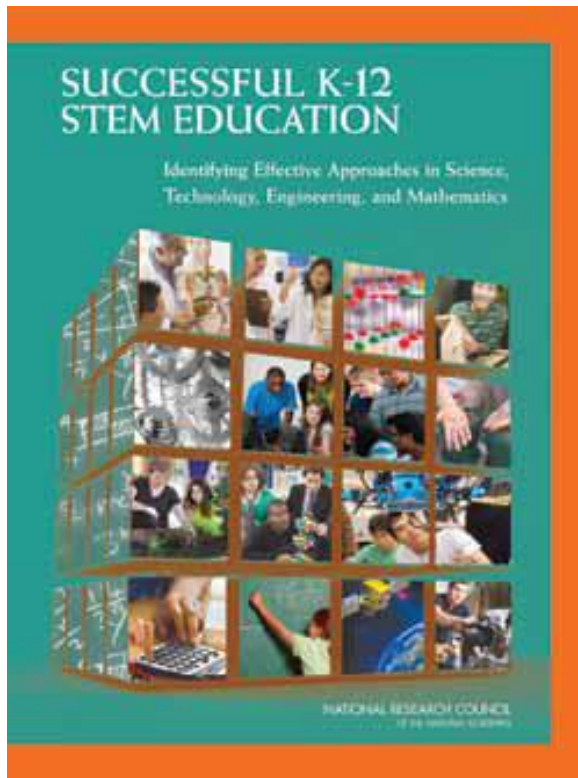
# Study of Selective STEM-Specialty Schools (S5)



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# Study of Selective STEM-Specialty Schools (S5)

## A Call For Action



**Key element: Equal access to high-quality stem learning opportunities.** Many factors, including poverty, contribute to well-documented achievement gaps, but states, schools, and districts can address some of them. For example, disparities in access to quality teachers and other school factors—such as access to adequate laboratory facilities, resources, and supplies—can be redressed to close the gaps in science achievement for underrepresented groups.

Federal agencies should support research that disentangles the effects of school practice from student selection, recognizes the importance of contextual variables, and allows for longitudinal assessments of student outcomes.

# Study of Selective STEM-Specialty Schools (S5)

## Rationale – What are selective STEM specialty schools?

Primarily schools in the National Consortium of Specialized Secondary Schools in Math, Science, and Technology (NCSSSMST)

1. State residential schools
2. Stand-alone schools
3. Schools-within-a-school
4. Regional centers with half-day courses

# Study of Selective STEM-Specialty Schools (S5)

## Rationale – What is meant by “selective”?

Not all STEM schools are selective.

Selective STEM schools for S5 admit students based on:

- Entrance exam
- Lottery (from oversubscribed application pool)
- Application packets, which include grades/transcripts, STEM interests and activities, interviews, and recommendations

# Study of Selective STEM-Specialty Schools (S5)

## Basic Questions

The S5 study asks the obvious:

**What happens to students of selective STEM schools?**

However, S5 will be the first study that also asks:

**What happens to the qualified applicants who do not attend?**

# Study of Selective STEM-Specialty Schools (S5)

## Research Question #1

Does winning admission to a selective STEM specialty school improve students' academic success on the PSAT/NMSQT, SAT/ACT, SAT subject tests, and IB and AP math and science tests?

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## Research Question #2

Do the impacts of winning admission to a selective STEM specialty school:

- vary depending on student characteristics?
- vary by type of school (such as residential versus non-residential)?
- improve the following student outcomes: participation in STEM competitions, winning same STEM competitions, publications, National Merit scholarships, declared interest in a STEM major in college, and career interest in a STEM field?

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## Research Question #3

Are students' educational outcomes at STEM specialty schools more cost-effective than the educational outcomes of students who do not win admission to a STEM school?



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## Study Requirements

- Provide annual transcripts/student records for participating students (preferably with any standardized test results);
- Provide detailed course descriptions and a school curriculum map;
- Provide test scores for the PSAT/NMSQT, SAT/ACT, SAT subject tests, and IB and AP math and science tests; and
- Assist in recruiting students to complete initial and annual surveys.

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## Schools Get:

- Input into annual student questionnaire;
- Customized, individual analyses and reporting of school results;
  - New indicators of school effectiveness;
  - Data that inform admission processes and criteria;
  - Systematic data on differences in advanced STEM learning opportunities at other schools where qualified applications attend; and
  - Enables any school to benchmark results for their students compared to students at all schools participating in the study.
- Limited funds available upon request to offset staff time;

# Study of Selective STEM-Specialty Schools (S5)

## Progress To Date

- During the current 2013-14 school year, we piloted study surveys with 150 students in 8 varied STEM specialty schools across the nation.
- For next school year (2014-15), we already have agreements to participate with 14 schools, which now provides us with access to recruiting 2,000 students.
- At least 7 additional schools representing 1,000 students are in discussion with us for next year. And we have early relationships with additional schools that could be recruited for next year, representing another 1,000 students.
- For the 2015-16 school year, STEM-specialty schools in New York City alone would offer access to another 6,000 students for recruitment. We also have additional schools in discussion with us for 2015-16.