



## NINTH GRADE PHYSICS REVERSES SCIENCE ACHIEVEMENT GAP

**You can now officially stop thinking of the achievement gap as intractable.**

A remarkable approach to teaching high school science has extinguished the achievement gap in science.

The New Jersey Center for Teaching and Learning's Progressive Science Initiative® (PSI®), a program designed to advance attainment in science, has given schools serving high percentages of low-income students and students of color the ability to outperform schools with less diverse, more affluent students.

In 2012, six of the top twelve New Jersey schools for Advanced Placement Physics B participation were schools that use PSI. The PSI schools served dramatically more students of color (70%) than the non-PSI schools (8%). The same is true of economic status, where PSI schools served more low-income students (61%) than the non-PSI schools (4%).

### Top 12 NJ Schools for AP Physics B Participation - May 2012

State Rank	Rate	Name	District	District Demographics	
				Economically Disadvantaged	Black & Hispanic
1	62.3%	Bergen Tech Teterboro	Bergen Vocational	10%	25%
2	42.7%	Technology HS	Newark	89%	88%
3	30.1%	Arts High	Newark	71%	92%
4	30.0%	Cresskill HS	Cresskill	3%	9%
5	25.4%	McNair Acad HS	Jersey City	51%	40%
6	22.7%	Ridge HS	Bernards Twsp	2%	5%
7	19.4%	Delaware Valley HS	Delaware Valley Regional	5%	4%
8	16.6%	Glen Ridge HS	Glen Ridge	0%	10%
9	16.6%	Madison HS	Madison	8%	11%
10	14.6%	Liberty HS	Jersey City	59%	84%
11	14.1%	Bernards HS	Somerset Hills Regional	7%	12%
12	14.0%	Malcolm X Shabazz HS	Newark	84%	100%

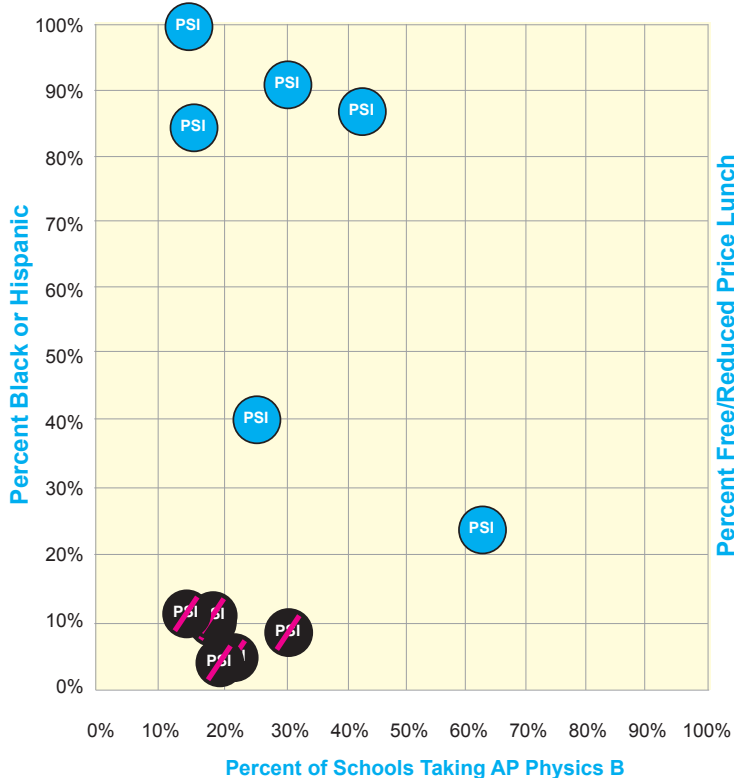
**PSI High Schools                      60.8%                      70.2%**

**non-PSI High Schools                      3.8%                      8.0%**

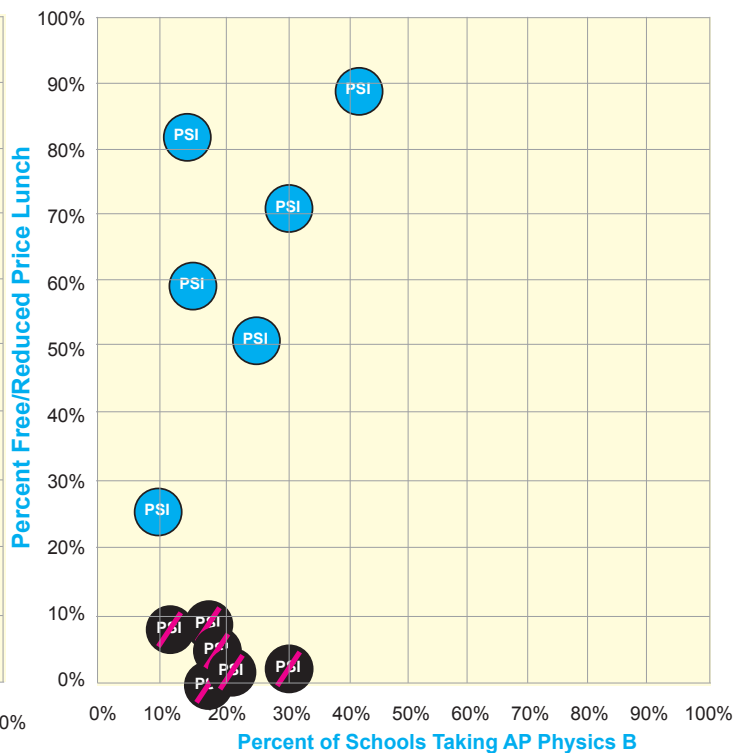
	PSI School
	Non-PSI School



Data Source: 2012 NJ School Performance Report (<http://education.state.nj.us/pr/>) AP Participation Rates calculated by dividing the number of exams taken for AP Physics B by the average number of students per grade.

**BLACK AND HISPANIC STUDENTS' RATES OF PARTICIPATION IN AP PHYSICS B**  
Top 12 New Jersey High Schools 2012



**ECONOMICALLY DISADVANTAGED STUDENTS' RATES OF PARTICIPATION IN AP PHYSICS B**  
Top 12 New Jersey High Schools 2012



 PSI High School  
 Non-PSI High School

Data Source: 2012 NJ School Performance Report  
 (<http://education.state.nj.us/pr/>)  
 AP Participation Rates calculated by dividing the number of exams taken for AP Physics B by the average number of students per grade.

PSI works because it makes sense to districts, schools, teachers, parents, and students. It requires all students to study physics in the ninth grade; requires physics teachers to be able to pass the final test in the course they teach; gives teachers real-time feedback to guide instruction; and makes free online teacher presentations, assignments, homework, and labs available to parents, teachers, and students 24/7.

PSI's success proves the achievement gap is not a fact of life. It is a consequence of educational inequality. Where all students are taught physics early and well, success follows. Where physics instruction is not required, students are shut out.

**When it comes to science, the achievement gap is an elective.** Too many schools ignore physics. There are too few physics teachers, too few physics courses offered, and too few physics students. Schools serving low-income students are less likely to offer physics than are other schools. These realities create the achievement gap.

**The Progressive Science Initiative has shown the way. The New Jersey Center for Teaching and Learning challenges educators and policy makers to demonstrate the will to eliminate the achievement gap in science.**

**The federal government** can act to eliminate the achievement gap in science.

- *Prioritize funding for programs requiring physics for all students*
- *Prioritize funding to create physics teachers*
- *Help states collaborate to create a mutually recognized physics test*

**States** can act to eliminate the achievement gap in science.

- *Develop a physics-specific certification for teachers*
- *Remove barriers to alternative pathways to physics certification*
- *Make physics a high school graduation requirement*
- *Develop a state test for physics*
- *Recommend a physics-chemistry-biology instructional sequence*

**Districts** can act to eliminate the achievement gap in science.

- *Hire physics-qualified teachers to teach physics*
- *Offer effective, swift, alternative pathways for teachers to become physics teachers*
- *Require physics for all high school students*
- *Recommend students complete the physics-chemistry-biology sequence*

**Parents** can act to eliminate the achievement gap in science.

- *Ask their districts about its approach to science instruction and demand the best*
- *Support local and state changes that put the physics-chemistry-biology sequence in place*
- *Help their children learn and grow through science activities*

Learn more at [www.njctl.org](http://www.njctl.org)

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