

John D. O'Bryant School of Mathematics and Science

The Advanced Placement Program:
Increasing Student Access and Success



- AP Calculus Teacher
- Graduate of Northeastern
- Bridge to Calculus Teacher
- Teaching at O'Bryant for 6 years



- About the O'Bryant
- About AP Calculus
- About AP Science
- Research Guiding Us
- Panel Q&A

About the O'Bryant



- Overview
 - Grades 7-12, college preparatory
 - 1360 students
 - 70+ teachers
 - Public exam school within Boston Public Schools
 - Students from throughout Boston



- Racial Demographics
 - 42% Black
 - 23% Asian
 - 22% Hispanic
 - 12% White
 - < 1% Native American
- Gender
 - 42% Male
 - 58% Female



- Language Demographics
 - 9.2% LEP/FLEP
 - 68% language other than English spoken at home
- Economic Demographics
 - 71% Free or Reduced Lunch



- The First AP Courses
 - 1994 Calculus and English Literature & Composition
 - 1995 added Biology and US History
 - 1998 added Chemistry
 - Until 2003, no more AP classes were added



- Recently added AP Courses
 - 2004 AP Physics
 - 2005 AP Statistics
 - 2006 AP US Gov't and Politics
 - 2007 AP European History
 - 2007 AP Calculus BC
- 2007, twelve different AP courses



AP Scholars!

2007

9 AP Scholars

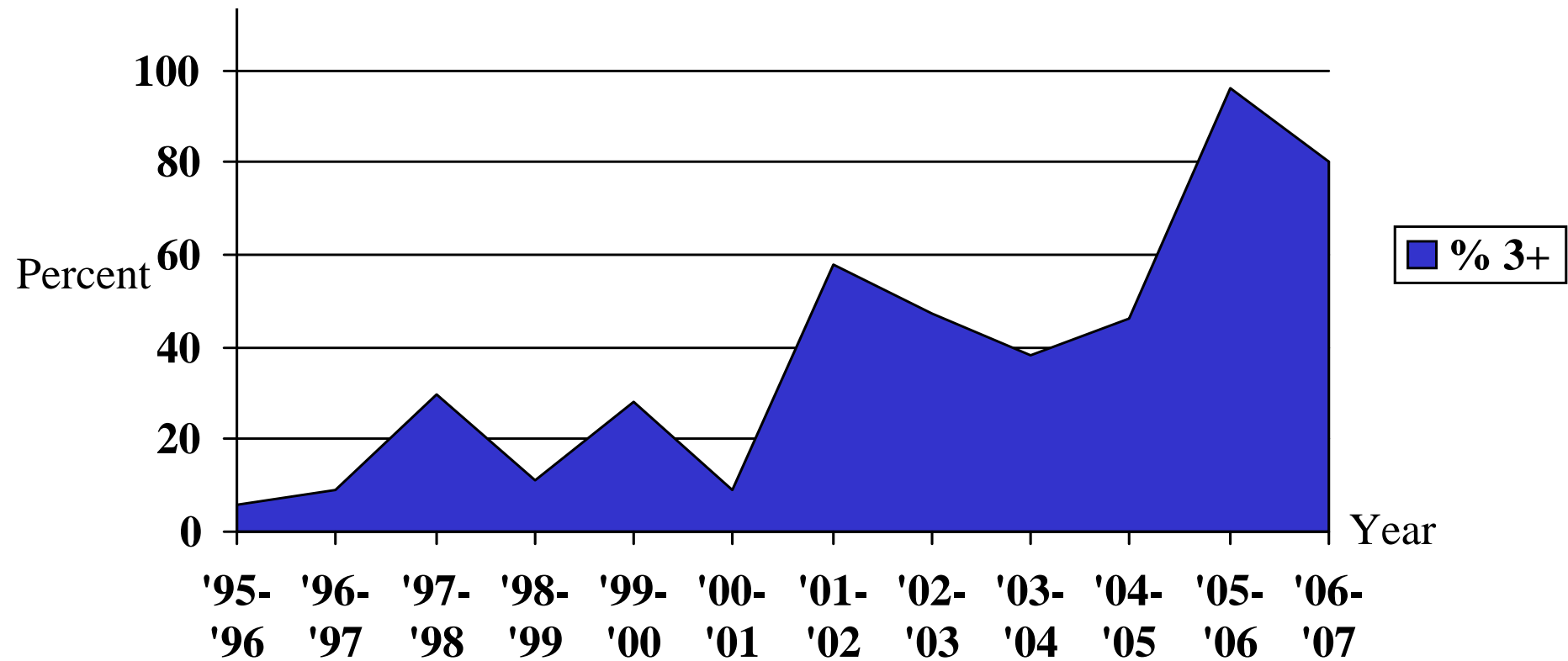
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About AP Calc

Where did we come from?

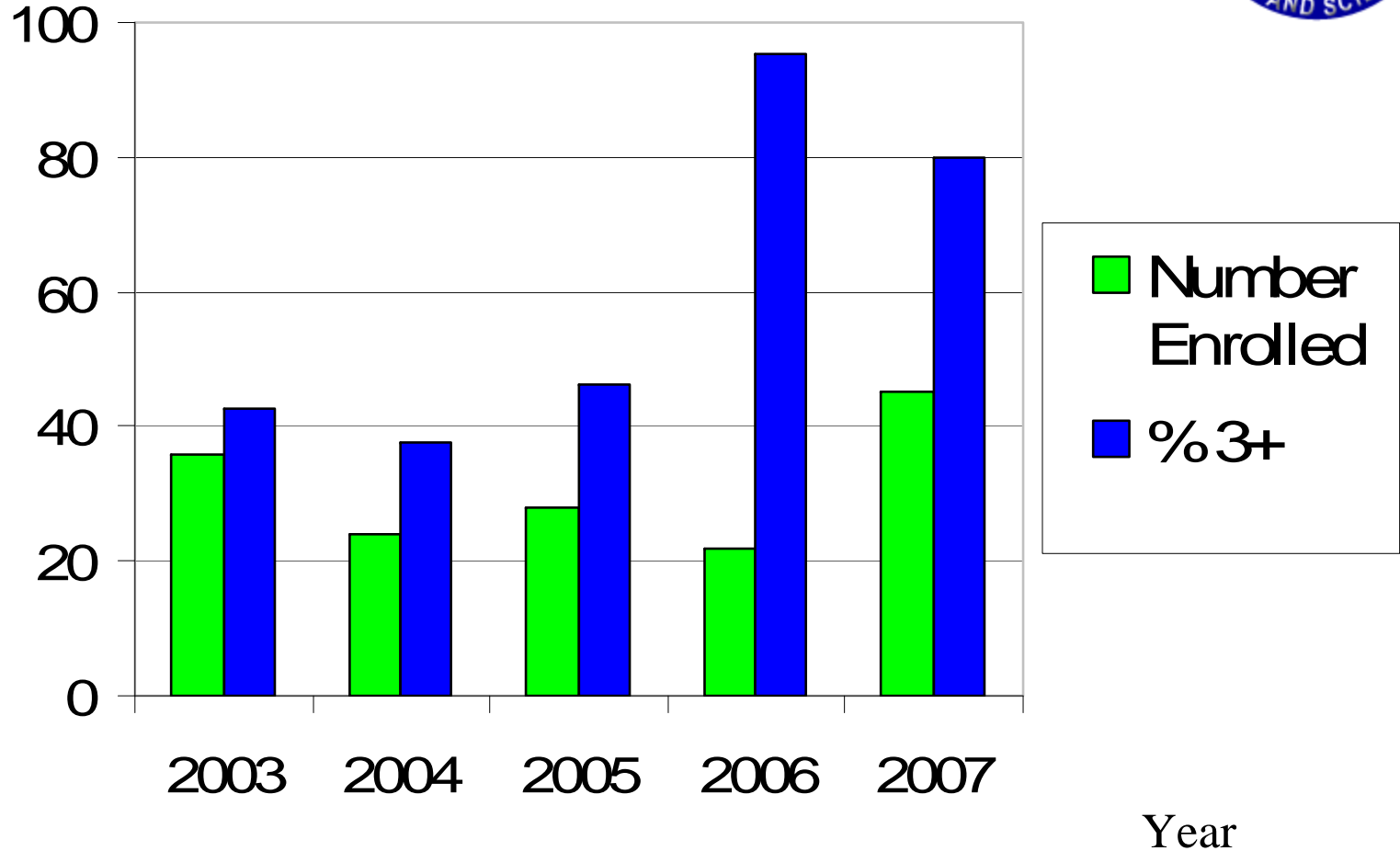


Percent of students earning 3 or above on AP Calculus exam



About AP Calc

Where did we come from?





About AP Calc

How did we get here?



1. Create supports for success for all students
2. Building partnerships with the community

Supporting Success

Macro



1. Creating a culture of AP expectation for students
2. Modifying classroom instruction
3. Supporting the program through scheduling



Adapting to challenges

How have we changed?



1. Culture of the school
2. Support of teacher growth
3. Schedule



Supporting Success Micro



- Bridge to Calculus
- Emphasis on AP test strategies and questions
- Tutors and mentors for students

Students Speak Out Bridge to Calculus



- How do I get through AP Calculus?
- Why are we doing this to ourselves?
- What are the benefits of having another teacher in class?

Students Speak Out AP Calculus



- Summer School!
- Why I chose to do the Bridge program...
- What a typical Bridge day looks like...



Adapting to challenges

Greatest challenges now?



- Funding outside school-day supports

- Scheduling and staffing



- Program Director, Science & Technology
- District Coordinator for AP Science Support Programs
- Former AP Physics Teacher
- 20+ Years Experience in BPS

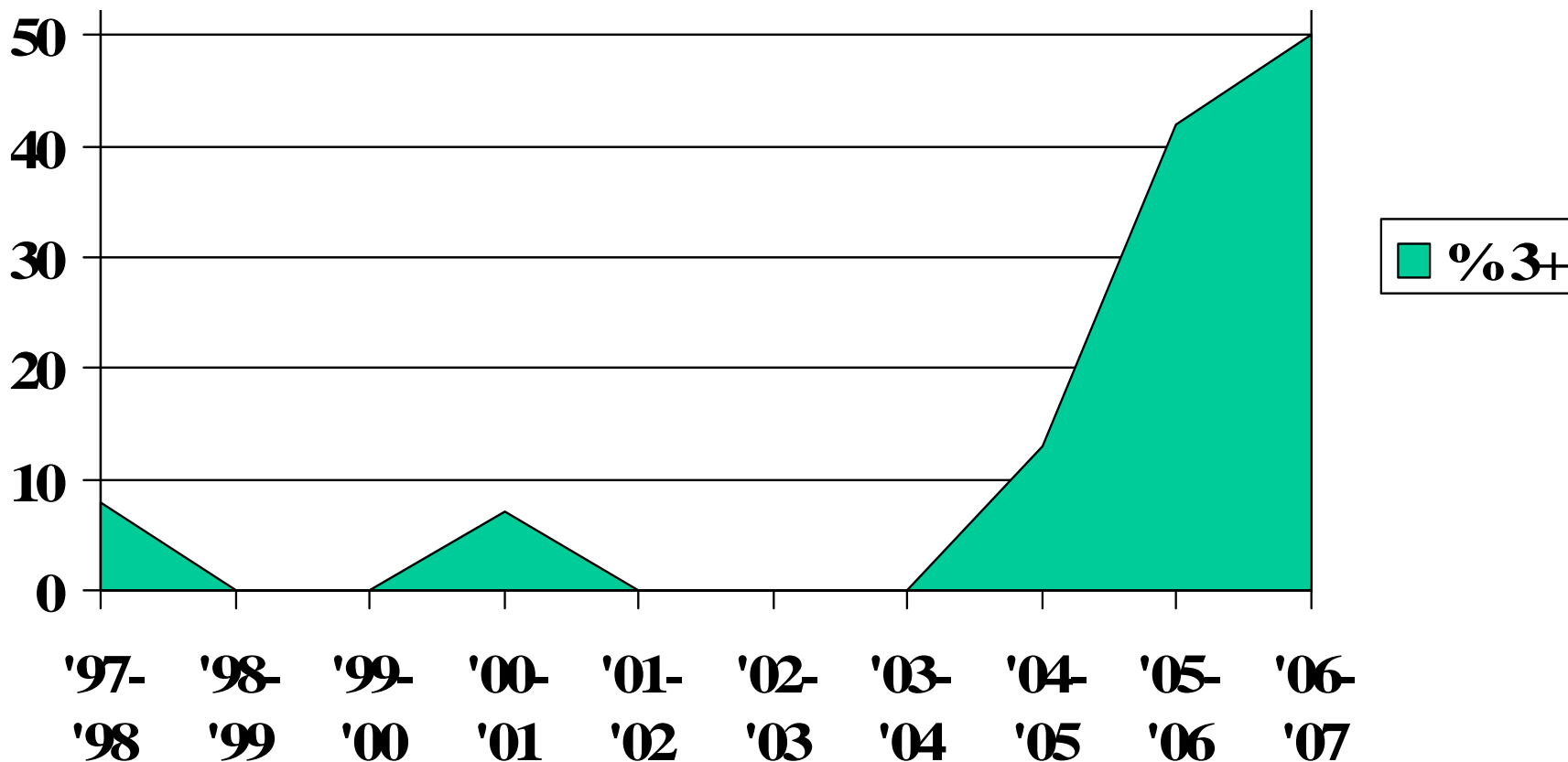
Bridge to Science

The next step in supporting student access
and success in the AP program...

Where did we come from?



Percent of students earning 3 or above on AP
Chemistry exam

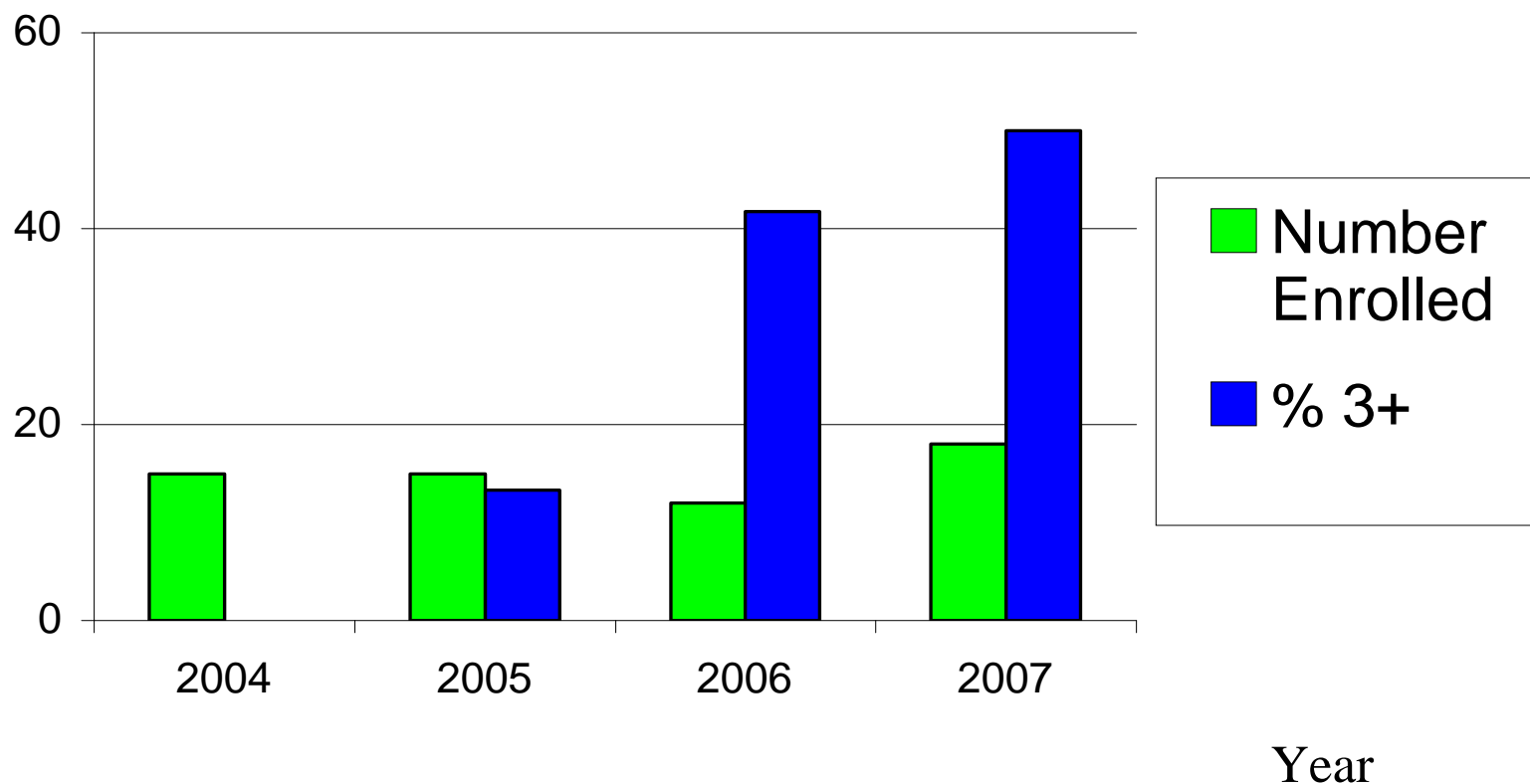


About AP Chemistry

Where did we come from?



AP Chemistry





1. Provide Supports for Success for All Students
2. Develop Supportive Partnerships with the Community
3. Provide Growth Opportunities and Support for Teachers
4. Provide Ample Time and Resources for AP Classes

Science faces unique challenges...

Supports for Students



- Summer “Bridge to AP Science” Program
- After School Tutoring
- Practice AP Exams
- Extra Instructional time



- **University Partners**
 - Northeastern University
 - UMass/Boston
 - Harvard Medical School
- **Grant Support**
 - Boston Science Partnership
 - CollegeBoard
 - Edvestors
 - Nellie Mae Foundation
- **Parent Support**



- **AP Teacher Training**
 - CollegeBoard Workshops
 - Monthly AP Science Teacher Meetings
- **Mentor Support**
 - RESEED Program Volunteers
 - AP Coaches
- **Graduate Student Support**
 - GK12 Program

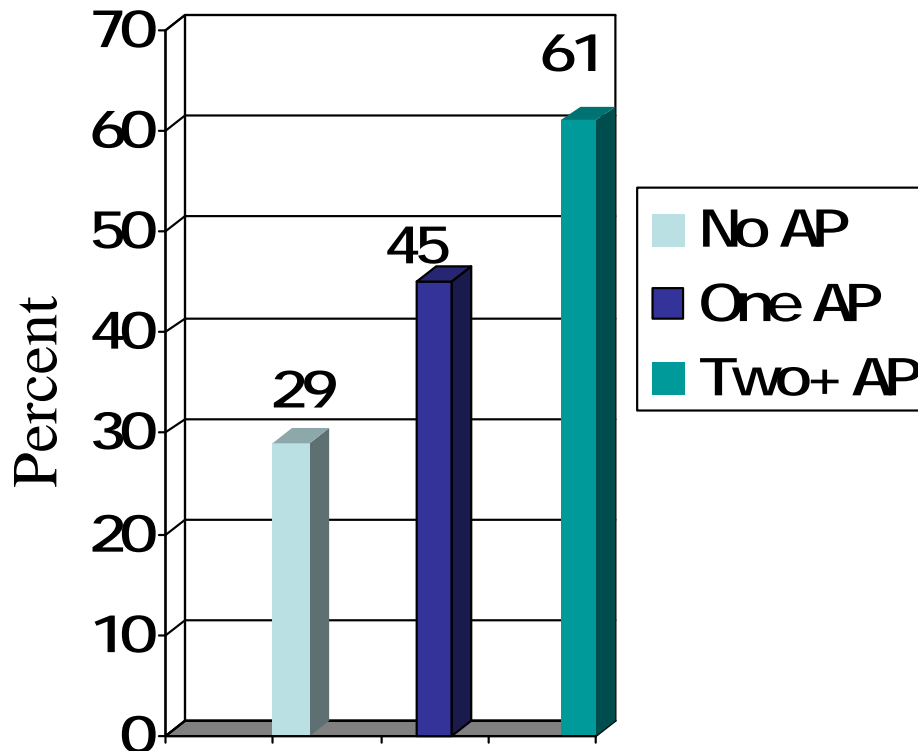
- **Classroom Resources**
 - Recent Editions of Textbooks
 - Lab Supplies/Equipment
 - Proper Lab Space/Safety Equipment
 - Access to Technology
 - Test Preparation Books
- **Time**
 - Summer Program “Levels the Playing Field”
 - Appropriate Time Built into the Schedule
 - Saturday/After School Lab Sessions at Partner Institutions
 - Practice Exam Days



- Maintain and “Institutionalize” Support Programs
- Vertically Align Curriculum
- Train Additional Teachers to Teach AP Courses
- Support for Additional Science Faculty as We Expand Access to AP Science Courses
- Provide “Reading and Writing” Support for Students - Particularly in AP Biology

What some of the research says...

Why expand AP programs in urban schools?



Students who take AP courses and exams are much more likely than their peers to complete a bachelor's degree in four years or less.

Source: Camara, Wayne. (2003). College Persistence, Graduation, and Remediation. *College Board Research Notes (RN-19)*. New York, NY: College Board.



Why expand AP programs in urban schools?



A high school curriculum of high academic intensity and quality such as that found in AP courses is the factor that most contributes to a student's likelihood of completing a college degree.

Exposure to this curriculum is a much better predictor of college success than a student's high school GPA or test scores.

85% of AP students continue their education beyond high school.

Source: Adelman, Clifford. *Answers in the Tool Box*. U.S. Department of Education (1999).



Why expand AP programs in urban schools?



Impact of AP on 5-Year College Graduation Rates

Student Group	AP Exam Grade of 3, 4, 5	AP Exam Grade of 1, 2	Took AP course, but not exam
African-American	28% higher	22% higher	16% higher
Hispanic	28% higher	12% higher	10% higher
White	33% higher	22% higher	20% higher
Low-Income	26% higher	17% higher	12% higher
Not Low-Income	34% higher	23% higher	19% higher

Source: Chrys Dougherty, Lynn Mellor, and Shuling Jian, *The Relationship Between Advanced Placement and College Graduation* (National Center for Educational Accountability, 2005)



Why expand AP programs in urban schools?



Research shows that students who take an AP Biology or AP Physics science course in high school are more likely to major or minor in those disciplines in college than those students who are first exposed to college level work in math and science in college

Source: "AP Students in College: An Investigation of their Course-Taking Patterns and College Majors", Morgan and Maneckshana, 2002

Research indicates that completion of an AP science course in high school has a significant positive impact on college persistence (attending a second-year of college).

Source: "The Link Between Advanced Placement and College Success". Klofstein, 2005

AP Chemistry Blog

AP ChemistryOB



Contact Information



Headmaster – Joel Stembridge

jstembridge@boston.k12.ma.us

Program Director for Mathematics – Patricia Carr

pcarr@boston.k12.ma.us

Program Director for Science – Michael Sullivan

msullivan4@boston.k12.ma.us

AP Calculus Teacher – Jason Joseph

jjoseph2@boston.k12.ma.us