

Advocates for Better Course Choices in BCPS High Schools
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I am writing to express my support for some of the parents of students at Towson HS. I have taught mathematics at Towson University since 1971, was a founder of the Maryland Coalition for Mathematics and Science, and just stepped down from a 14-year term as the Secretary of the Mathematical Association of America (MAA). What my colleagues and I are seeing at the collegiate level is an erosion of rigorous and strong preparation for college-level subject matter, especially in mathematics.

The proliferation of AP classes and the disappearance of high school honors and gifted and talented courses have hindered most of the students we see coming into the university. Students who take a rigorous AP course and who score 4 or 5 on the AP exam for the course were placed correctly and deserve commendation for their achievement. Teachers and their students who are performing well on the AP exam are doing well and we encourage their successes.

BUT not every student is capable of college-level work before they have completed the basics in their high school level courses. Students who are shepherded into AP classes where they do not belong bring down the level of the class below the intended level of sophistication. No one benefits. The capable students are held up by the slower ones and/or the slower ones are overwhelmed and demoralized. Tenth graders normally should be taking tenth grade work because they need the preparation it offers for 11th grade and 12th grade, as well as for college.

The students who ordinarily would be in honors or G&T classes may not yet have the solid background they need for college-level work in 11th grade. They may be well suited to 11th grade work (not college calculus or statistics) that is demanding and rigorous for them. They need to master the basics before college. And let's face it, not every student in 11th grade is ready for the same mathematics course at the same time. Not having some "standard" course for the ordinary students does not serve them well either.

I recently taught a college calculus course at Towson. Some of the students had sat through a year of high school calculus and they did reasonably well in my class, if they came to class. Some of them thought they knew the material already and never attended class! They were wrong. Students who went through AP calculus and hadn't gotten college credit for the course were no better off. Many of these students were pushed ahead even though they had not mastered trigonometry or what we might call pre-calculus. Students who do not know the formula for the area of a rectangle or how to graph the simplest functions, for example, are unprepared for calculus. Nevertheless, many of them were put into calculus at their high schools.

I am firmly opposed to enrolling students in AP courses by the droves. Baltimore County should expect that any student enrolled in an AP class is ready for a genuine college course and is expected to take the AP exam. It is the only means by which the students and their parents can understand whether they have mastered college-level work. We should recognize that pushing some of the brightest students into AP classes before they are ready does them a great disservice. At the same time, we should expect that high school classes for these bright students should be rigorous and demanding at their level. *This means that a range of levels should be available.*

My experience with a student a few years ago highlights my frustration. A student enrolled in 4 AP classes at a Baltimore County high school applied for admission into a scholarship program that I coordinate. In every one of her AP classes, she had second semester midterm averages in the mid 90's. We were happy to accept her. However, when she came to Towson she was placed in developmental math (although she had been enrolled in AP statistics at her high school). Although she had that midsemester grade in the 90's in AP Economics, she had to drop Economics 101 in the first month because she couldn't keep up. Problem: She could not read! She was placed in developmental reading at Towson. She had taken no AP test in any of her AP courses. Did she think she was getting college-level work in those classes? Did the educational system rob her of a decent high school education? She flunked out of college despite the many efforts

we made to help her. It was a crime to delude her into thinking she could handle 4 college-level courses as a senior in high school when she couldn't read and was placed in developmental mathematics.

Students need to have courses available that are suited to them. Something between "standard" and AP must be offered, and the success of the AP program in any school must be measured by the official AP exam grades of the students selected for the program, not by the number of students enrolled.

David Bressoud, President of the MAA, is the Principal Investigator on a grant to study college calculus. See:

http://www.maa.org/columns/launchings/launchings_07_09.html .

I also suggest you read the latest in a series of articles on the subject at: http://www.maa.org/columns/launchings/launchings_05_10-5.html#page6. Many of the concerns we have in mathematics are duplicated in other disciplines.

The Statewide Mathematics Group, led by Professor Denny Gulick of the University of Maryland College Park, has been working toward having our public schools engage our students in a *rigorous* college *preparation* program while they are in high school! I hope this becomes a reality soon! Good high school students who are not in AP classes should be afforded this opportunity.

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