

## The Impact of Advanced Placement Incentive Programs

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VOLUME 8, NUMBER 1, WINTER 2010

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### UPCOMING POLICY BRIEFS . .

- ✓ *Public Law 221: Is Indiana's Accountability Law Working or is it Another Passing Education Reform Fad?*
- ✓ *The Effects of Arts Education on Student Achievement*
- ✓ *Trends in Alternative Teacher Certification for Elementary and Secondary Teachers*

### INTRODUCTION

In December of 2009, Indiana Governor Mitch Daniels announced that the latest state revenue forecasts predict that the state of Indiana will spend \$1.8 billion more than it receives in tax revenue collections through July 2011. With a little over half the state budget spent on K-12 education, cuts need to be made to education spending in order for the state to remain in the black. Therefore, Governor Daniels announced that he will cut at least \$300 million from K-12 education spending in the next year, and another \$150 million in funding for state colleges and universities (Carden, 2009). In this current economic environment both students and school administrators alike are feeling the need for education to become more efficient and effective. Programs such as the International Baccalaureate program, the Advanced Placement program, and dual credit courses, which can streamline and improve the transition between high school and college, have thus become increasingly appealing. These programs present the crucial educational rigor necessary to keep U.S. students academically on pace with students in other countries, particularly in math and the sciences, which will help the U.S. stay relevant in a competitive global economy for generations to come.

Although not without their critics, these programs are generally well regarded as positive and effective models for providing intensive educational opportunities to high school students, who have the ability and motivation to study college-level material. In fact, these programs have become so well received and widespread that they have become the focus of a significant number of incentive programs across the United States whose main goal is to encourage or entice high school students into these advanced educational programs.

But at what cost? With education cuts being made across the country, is it reasonable for federal and state governments to be putting money into programs which encourage students to take advanced coursework?

This Education Policy Brief will examine, in particular, the incentive programs for the most popular and widespread of the accelerated education programs, the Advanced Placement (AP) program. After a brief historical overview of the AP program and a discussion of its merits, the brief will look into the various types of incentive programs found in the U.S. today, highlighting, in particular, several prominent or notable incentive programs. The Policy Brief will also examine some of the scholarly research that has been conducted regarding the effectiveness of the various incentive programs. Finally, conclusions and recommendations will be made to improve AP incentive programs.

It is important to recognize that the purpose of this Education Policy Brief is not to determine the effectiveness or significance of the Advanced Placement program itself. Rather, this Policy Brief analyzes the effect and effectiveness of the various incentive programs used to promote AP participation. The important question thus investigated in this report asks: Are AP incentive programs beneficial in increasing meaningful implementation of AP programs by schools and teachers, and successful participation from students in AP courses?

### HISTORY OF AP PROGRAMS

The Advanced Placement (AP) program was developed in the 1950's as a means to give young Americans an educational edge by offering rigorous college-level courses in high school. Today, the College Board's

AP program continues to serve this function. Currently, the AP program is designed to prepare high school students for college by offering 37 college-level courses, followed by an exam at the end of each course. AP exams are scored on a numeric scale of 1 to 5, with 1 being the lowest score and 5 being the highest. Scores of 3 or above are generally regarded as passing scores. If the student passes the exam, he or she may be granted college credit, be exempted from a class, or fulfill a university requirement.

The success of the program in providing advanced coursework to high-performing high school students has been consistent over the years. Studies have shown that students who score at least a 3 on an AP exam experience greater academic success in college and graduate from college at higher rates than their comparable, non-AP peers (Dougherty, Mellor, & Jian, 2006a; Gonzalez, O'Connor, & Miles, 2001; Keng & Dodd, 2008). Students who earn AP scores of 3 or better in high school generally outperform students who earn lower scores on the exam or who do not take an AP exam at all on various measures of college outcomes, including GPA (Dodd et al., 2002; Geiser & Santelices, 2004). Students who take an AP course in a given subject area in high school also tend to take more courses in the same subject area in college than students who do not take AP courses (Koch et al., 1988; Morgan & Maneckshana, 2000). Furthermore, participation in the AP program increases students' chances of graduating from a postsecondary school within four years (Dougherty, Mellor, & Jian, 2006; Hargrove, Godin, & Dodd, 2008). Four-year graduation can be an important financial factor for many students given the typical college costs per year at a four-year public institution, which can range from \$7,662 for in-state students to \$18,529 for out-of-state students, and higher for private institutions (College Board, 2009a).

The debate over the AP program centers on ways of promoting the program to increase participation and success, especially in schools with a large percentage of minority or low-income students. Many schools across the country currently do not offer any AP courses; latest estimates by the College Board indicate that approximately one-third of schools in the United States did not offer AP courses in 2007 (College

Board, 2009b). Most schools that do offer AP courses are only able to offer a select few of the 37 different AP courses available. The problem of participation is compounded by students who take AP courses but do not take the corresponding AP exam necessary to gain credit for the course. Since the College Board charges a fee of \$86 for taking an AP exam, some students who take the course may be unwilling or unable to pay the fee to take the exam. According to the U.S. Department of Education, approximately 600,000 students who take AP courses each year do not take the corresponding exams (No Child Left Behind, Sec. 1702). Success on AP exams has also been elusive for many students. The latest estimates reveal that 15.9 percent of the public high school class of 2009 nationwide achieved at least one AP exam score of 3 or higher. Although this percentage represents an improvement from 12.2 percent of students in 2003, there are still 16 states (including the District of Columbia) in which less than 10 percent of students achieved an AP exam score of at least 3, as can be seen Figure 1 (College Board, 2009c, 2010).

Rates of participation and success in AP courses among certain minority and low-income student groups have been particularly low since the inception of the AP program. Despite increases in the number of minorities and low-income students participating in AP courses in recent years, certain populations today still remain underrepresented in AP programs across the nation. According to the College Board (2010), the largest gap exists in the African American student population, which represent 14.5 percent of the public high school graduating class of 2009, but only 8.2 percent of the AP examinee population. A small gap exists for Latino students, which represent 15.9 percent of the public high school graduating class of 2009, and 15.5 percent of the AP examinee population. Likewise, American Indian or Alaska Native students represent 1.2 percent of the public high school graduating class of 2009 and 0.6 percent of the AP examinee population. Thus, we can see that although participation in AP programs has been linked to success at the post-secondary level, there has not been sufficient or equitable participation across the U.S.

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## CURRENT STATUS OF AP INCENTIVE PROGRAMS

Recently, various initiatives and incentives have been developed to promote participation in the AP program. There are generally three different types of incentive programs: financial incentives, accountability incentives, and scholarship incentives.

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### Financial Incentives

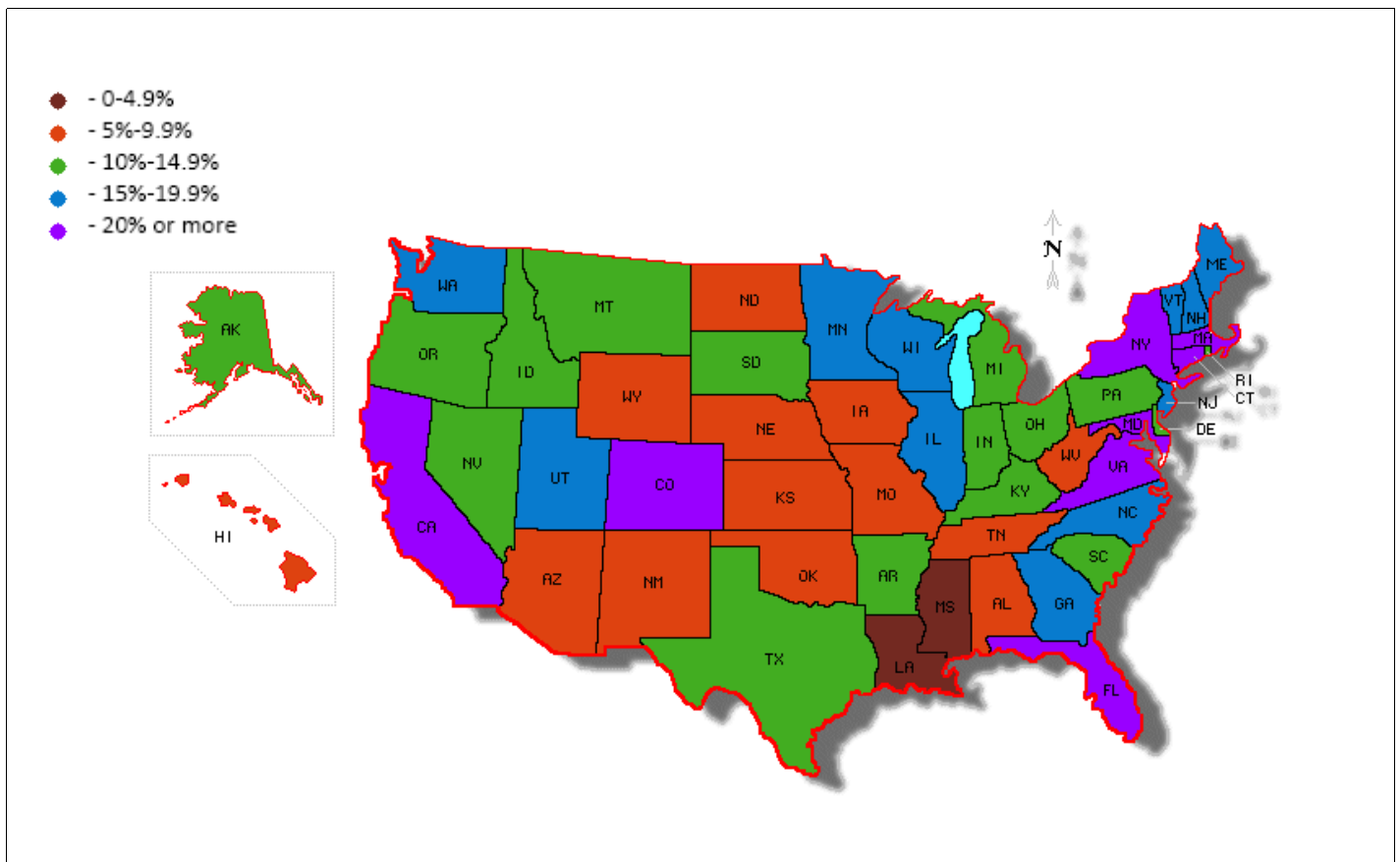
Financial incentives, including federal funding for AP programs and state appropriations for school AP course budgets, are a common method used to increase participation in AP programs. In addition to the national Advanced Placement Incentive Program, established by the No Child Left Behind Act, many state and local education agencies, as well as other nonprofit organizations, have created and implemented additional funding incentive programs. All state governments, except Oregon, subsidize at least a portion of exam fees for certain, primarily low-income, AP test takers (Education Commission of the States [ECS], 2006). Indiana, for example, subsidizes science and math fees for all students when the state budget allows it (College Board, 2009d). Another popular financial incentive strategy has been direct cash bonuses to students for passing AP exam scores, or to teachers for their students meeting certain performance targets. For example, the Texas AP incentive program awards both minority students and their classroom teachers with cash ranging from \$100 to \$500, depending on the student's AP exam score.

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### Accountability Incentives

Accountability requirements are another common AP incentive. Schools only qualify for federal AP funding if they disclose the number of students in the school, the number of students who take an AP exam, and the demographic information about the students (sex, race, ethnicity, English proficiency, and socioeconomic status). Some states, including Arkansas, Indiana, New Jersey, and Ohio, have expanded these qualifications to include the percentage of the student body taking the exams and the percentage that receive a passing score.

**Figure 1. Percentage of Students Scoring a 3 or Better on an AP Exam in 2009**



Source: *AP Report to the Nation*, Appendix C. Retrieved February 12, 2010, from [http://www.collegeboard.com/html/aprtn/pdf/ap\\_report\\_to\\_the\\_nation.pdf](http://www.collegeboard.com/html/aprtn/pdf/ap_report_to_the_nation.pdf)

Furthermore, other states, like Colorado and Michigan, require that schools participate in the AP program to be accredited (ECS, 2006). Accountability incentives are the most popular type of incentives used by state governments, although the third category, scholarship incentives, is used by only a few states. See Table 1 for a list of the various types of incentive programs offered and funded by each state.

### Scholarship Incentives

In several states, certain scholarships are made available to students who have passed AP exams. Massachusetts, for example, waives tuition at a state postsecondary institution for eight semesters to any student that has passed two AP exams and maintains a 3.3 GPA (Massachusetts Regulations Code 603, CMR 31.00). Minnesota students who successfully pass an AP exam can receive an “Achieve Scholarship” worth up to \$1,200. Several states,

including Massachusetts, Arizona, and Kentucky, also include AP performance as a prerequisite to certain state scholarships (ECS, 2006; Wakelyn, 2009).

### MODELS OF AP INCENTIVE PROGRAMS

The Access to High Standards Act, authorized by the Elementary and Secondary Education Act of 1965, as amended, established two programs that support state and local efforts to build programs that provide low-income students access to pre-advanced and Advanced Placement courses and exams. Funds appropriated under the Act are first used to make awards for the Advanced Placement Test Fee Program (APTFP). Remaining funds are used to make continuation awards or new discretionary grant awards under the Advanced Placement Incentive Program (APIP) (NCLB, Sec. 1701-1706).

Through the APTFP, federal monies are distributed through an application process to state educational agencies to cover part or all of the costs of advanced placement test fees for low-income individuals.

Once the funding level for the APIP is determined, allocations are first used to cover the cost of continuation awards (grantees receive funds on a yearly basis for up to three years). Remaining funds for the APIP may then, if feasible, be distributed through a competitive process to state educational agencies, local educational agencies, or national non-profit organizations with expertise in advanced placement services. Grants are awarded to eligible entities that promote the development and/or expansion of pre-advanced placement and advanced placement programs and courses, particularly in English, mathematics, and science, in middle schools and high schools where at least 40 percent of the students are from low-income families. Funds can be used to support various activities including: teacher training, course

development, and books and supplies (I. Jaime, personal communication, January 14, 2010).

Since 2000, APIP has provided \$191 million in grants to a total of 141 school districts and state educational agencies (Wakelyn, 2009). In 2008, 20 eligible entities (out of 154 applicants) received an award, ranging from \$243,690 granted to the Weld County School District RE-8 in Colorado to \$983,013 granted to the Fresno Unified School District in California. Three eligible entities in Indiana applied for funding during the 2008 competition; however, none received funding. To date, only one APIP award has been made to an eligible entity located in Indiana. In 2002, the Indiana Academy located in Muncie received an award (I. Jaime, personal communication, January 14, 2010).

Data indicating the effects of the federal APIP, though limited, do indicate that the program has provided small but positive contributions to AP participation. The performance indicator used for the APIP is the ratio of Advanced Placement and International Baccalaureate tests taken in public high schools served by APIP grants to the number of seniors enrolled at those schools. This ratio has increased over the years; in the 2006-07 school year, this ratio for the 2006 grant recipient schools was 0.53, up from 0.46 for these same schools in the 2005-06 school year (U.S. DOE, 2008).

In general, the federal AP incentive programs may have contributed to the overall nationwide increase in AP participation. Nationwide, nearly 800,000 students from the graduating class of 2008 took at least one AP exam in high school, compared to 405,000 students from the class of 2000. Another positive trend is the decreasing equity and excellence gap among minority and low-income students in AP. As stated previously, African Americans comprised 14.5 percent of the public school graduating class of 2009, but only 8.2 percent of the population of students taking AP exams. However, these numbers are up slightly from previous years, in which African American students represented 7.8 percent of the AP exam population for the class of 2008, 7.3 percent for the class of 2007, 6.9 percent for the class of 2006, 6.4 percent for the class of 2005, and 6.0 percent for the class of 2004 (College Board,

**Table 1. Breakdown of AP Incentive Programs by State**

State*	Does the state offer:		
	Financial Incentives? **	Accountability Incentives?	Scholarship Incentives?
Alabama	✓		
Arizona			✓
Arkansas	✓	✓	
California		✓	
Colorado		✓	
Florida	✓		
Indiana	✓	✓	
Kentucky		✓	✓
Maryland		✓	
Massachusetts	✓		✓
Michigan		✓	
Minnesota	✓		✓
Mississippi			
Missouri	✓	✓	
New Hampshire		✓	
New Jersey		✓	
New Mexico	✓		
Ohio		✓	
Oklahoma	✓	✓	
Texas	✓	✓	
Utah	✓	✓	
Virginia		✓	
West Virginia		✓	
Wisconsin	✓	✓	

\* States without AP incentive programs (according to ECS) have been left out of the table.

\*\* Excluding subsidizing student test fees

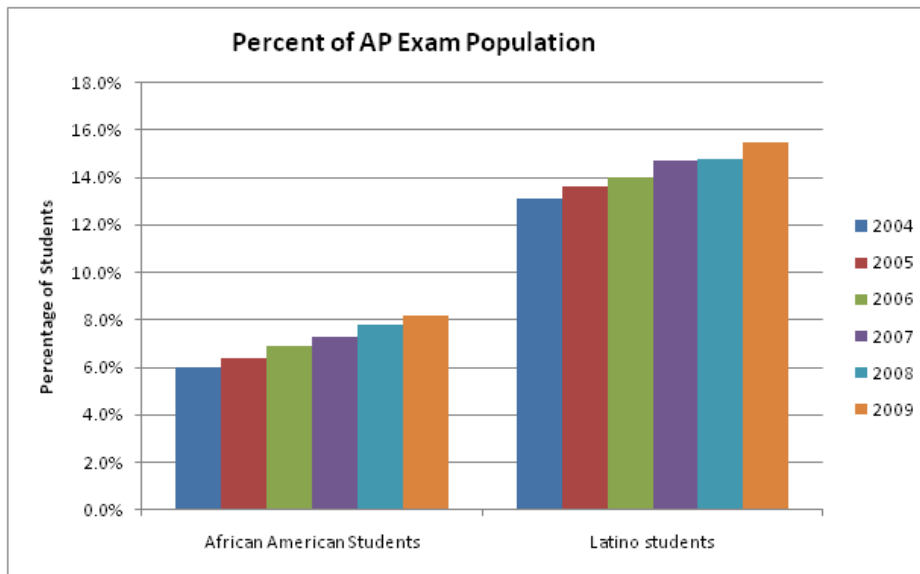
Source: *State Notes: Advanced Placement*. (2008). Education Commission of the States; Wakelyn, D. (August 2009). *Raising Rigor, Getting Results: Lessons Learned from AP Expansion*. NGA Center for Best Practices.

2005-2009). Similar trends are visible for Latino students, as can be seen in Figure 2.

Data on low-income students is limited, so it is difficult to accurately measure the equity gap for low-income students; however, more low-income students are participating in AP exams than in past years. Nationwide nearly 19 percent of AP examinees from the graduating class of 2009 were low-income students, as compared to 17 percent in the class of 2008, and 11.6 percent in the class of 2003. Furthermore, low-income students comprised 14.7 percent of students scoring 3 or better on an AP exam from the graduating class of 2009, up from 9.8 percent from the class of 2003 (College Board, 2009c, 2010).

These positive nationwide trend data, however, may mask some negative data. Along with the increase in AP participation, a decrease in success rates has emerged, as the percentage of students who took an AP exam and scored a 3 or above has decreased from 64.4 percent in 2003 to 60 percent nationwide in 2009 (College Board, 2009c, 2010). Furthermore, although the equity and excellence gap has been closing over the years, a gap still persists in AP programs for certain populations, especially African American students, which represented only 3.7 percent of the population scoring a 3 or better on AP exams. According to the College Board (2010), an equity and excellence gap exists in 48 states in regard to AP participa-

Figure 2.



Source: *Advanced Placement report to the nation*. (2005, 2006, 2007, 2008, 2009, 2010). College Board.

tion and performance by African American students; in 35 states, including Indiana, in regard to Latino students; and in 32 states in regard to Native American/Alaska Native students. The data on AP trends indicate that the combined efforts of federal, state, and local AP incentive programs nationwide have been only partially successful in delivering results; although participation is up, success rates are down, and the equity and excellence gap for African American students nationwide, and for Latino and Native American students in many states, has yet to be eliminated.

## AP INCENTIVE PROGRAM IN INDIANA

Many states, including Indiana, have implemented their own AP incentive programs designed to increase student participation and success in AP courses in their state. In 2009, House Enrolled Act 1001-SS (the state budget bill) appropriated \$953,284 per year of the biennium for Advanced Placement programs in Indiana (House Bill 1001-1, 2009). The state mandates that every high school must offer a minimum of two AP courses and every school district must provide AP science and math courses (Indiana Code [IC] 20-36-3).

Increasing math and science proficiency is a priority for Indiana. According to the

National Math and Science Initiative, 80 percent of jobs in the U.S. from 2009-2019 will require some math and/or science knowledge; yet less than 15 percent of students in the United States have the sufficient experience and knowledge in math and science to be successful (McElvey, 2009). Consequently, Indiana legislators have prioritized funding for the AP science and mathematics courses based on the amount of state funds available. The first priority of funds appropriated to the Advanced Placement program is to cover AP mathematics and science exam fees for students, while the second priority is to provide stipends for math and science teachers to attend AP training sessions. Only after all priorities for math and science have been met are funds allowed to be used for other AP subjects (IC 20-36-3-8). Table 2 presents the full detailed list of priorities as presented in Indiana Code 20-36-3.

Along with financial incentives for AP programs, the state also provides accountability incentives. On their annual performance reports, Indiana school districts must include both the percentage of students taking AP exams and the percentage of students scoring 3 or better on the exams (IC 20-20-8-80). AP test scores are also used as a criterion for placement in the top two categories of Indiana's school improvement and performance accountability system. According to P.L. 221, high schools in the top two performance catego-

ries (exemplary progress and commendable progress) must demonstrate, in addition to other requirements, improvement in the percentage of AP exam scores, results of Core 40 end-of-course exams, and graduates who earn an Academic Honors Diploma and Core 40 Diploma (IDOE, n.d.). Furthermore, beginning with the class of 2010, AP courses will be a requirement for high school students in order to achieve a Core 40 Diploma with Academic Honors (Indiana Administrative Code Title 511, rule 6-71.-6).

Indiana's Advanced Placement incentives have led to positive contributions to AP participation in the state in recent years. A total of 13,098 high school students took an AP exam in 2009, up from 8,206 in 2003—a 60 percent increase in 6 years. This compares to a 55 percent increase from 2003 to 2009 in the number of students taking exams nationally. At the same time, however, the percentage of students in Indiana who took an AP exam and scored a 3 or better decreased from 53.3 percent in 2003 to 50.3 percent in 2009—a 3 percent decrease in 6 years. This compares to a nationwide decrease of 4.4 percent during the same time period, from 64.4 percent to 60 percent (College Board, 2010). Indiana's focus on AP math and science courses has not produced results distinguishable from overall statewide results in all subjects. As can be seen in Figures 3 and 4, which present four different math and science AP courses, the number of students taking AP exams in these courses has grown steadily; however, the percentage of students successfully passing has slightly decreased over the same time period (College Board, 2001-2009).

## OTHER STATE AND LOCAL AP INCENTIVE PROGRAMS

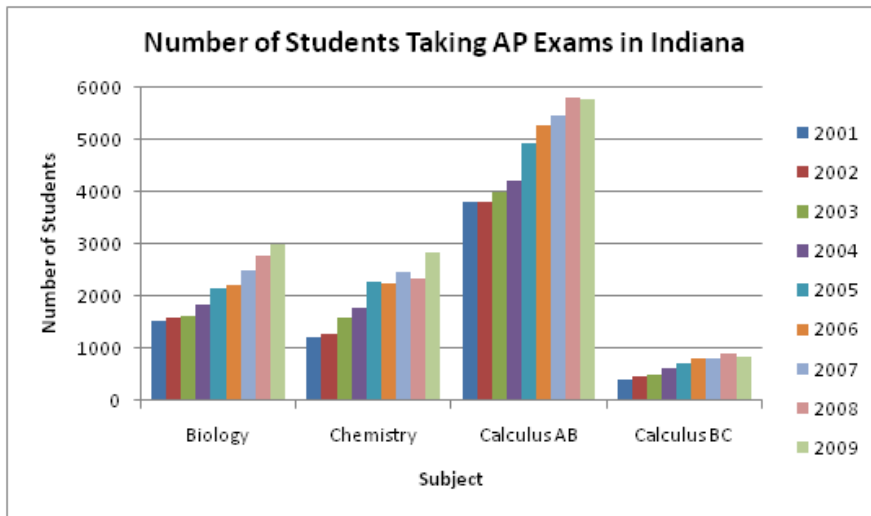
### Texas

A wide variety of Advanced Placement Incentive Programs can be found across the country. The state of Texas implemented its own Advanced Placement Incentive Program in 1996, with the aim of improving the college preparedness of more Texas students, particularly minority and low-income students. Only 10 Dallas schools participated in the first year of the program,

**Table 2. Indiana Code 20-36-3-8**

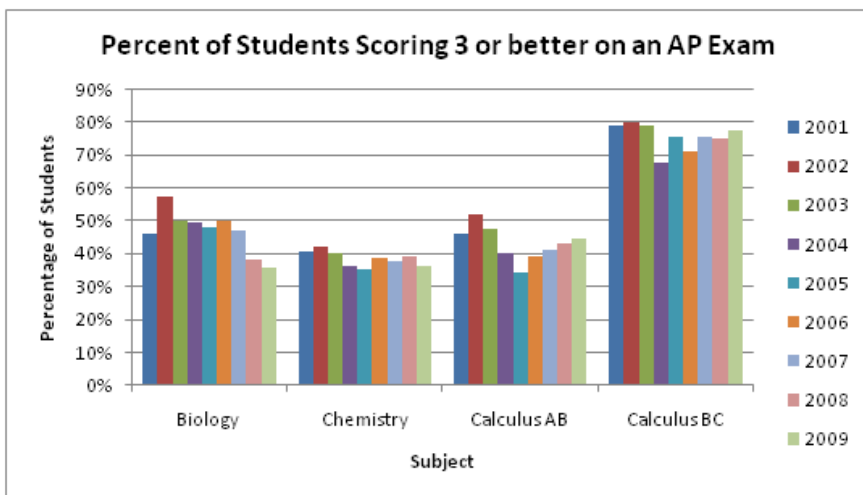
Money appropriated to the department to implement the program shall be distributed for purposes listed in the following order:
(1) To pay the fees for each math or science Advanced Placement examination that is taken by a student who is: (A) Enrolled in a public secondary school; and (B) A resident of Indiana Priority shall be given to paying the fees for each math or science advanced placement examination that is taken by a student in grade 11 or 12.
(2) To pay stipends for teachers assigned to teach a math or science advanced course to attend the [College Board summer training] institutes under section 7 of this chapter.
(3) To pay school corporations for instructional materials needed for the math or science advanced course.
(4) To pay for or rent equipment that a school corporation may need to develop a math or science advanced course.
(5) To pay the fees for the costs incurred in implementing the Advanced Placement program for the subjects other than math and science as authorized under section 5 of this chapter.

**FIGURE 3**



Source: State Summary Reports. (2001-2009). The College Board.

**FIGURE 4**



Source: State Summary Reports. (2001-2009). The College Board.

but currently more than 60 different schools across the state are now enrolled. Schools involved in the Texas APIP generally have a larger student body than those not participating, with larger percentages of African American and Latino students and lower percentages of White students.

The primary incentive of the program is financially based for both teachers and students, dependent upon AP exam performances. The amount paid per exam differs across districts, but generally students receive between \$100 to \$500 for each score of 3 or above per eligible AP course. Lead teachers—whose responsibilities include providing instruction to students and training for AP classroom teachers—receive an annual salary bonus from \$3,000 to \$10,000, plus an additional \$2,000 to \$5,000 based on results. AP classroom teachers themselves receive \$100 to \$500 dollars for each AP score of 3 or higher earned by students in their courses. The incentive program also provides teacher training conducted by the College Board, as well as enhanced curricula (beginning as early as Grade 7) designed to prepare students for AP courses. To encourage students to participate in AP courses and exams, Texas schools have attempted to change the “norm” by means of communication to the students via teachers and guidance counselors regarding college, the AP program, and its benefits (Jackson, forthcoming).

The results of Texas’ Advanced Placement Incentive Program have generally been positive. The initiative has increased the number of Texas students scoring above 1100 on the SAT or above 24 on the ACT by 30 percent and has increased the number of high school students going to a Texas college by 8 percent (Jackson, forthcoming). A study of the effects of the Texas Advanced Placement Incentive Program suggests that these increased outcomes are likely the result of stronger student encouragement from teachers and counselors to enroll in AP courses, better information provided to students, and changes in teacher and peer norms (Jackson, forthcoming). Although the results of the initiative show an increase in the number of students enrolling in college in Texas, there is no effect on high school graduation rates or on the number of students taking college entrance exams.

The influence of the incentive program on minority and low-income students in particular appears to be significant. The same study of schools participating in the Texas APIP revealed that overall increases in AP exam-taking were driven by increased participation for African American and Latino students; on the other hand, this study showed no statistically significant effect of the Texas APIP on the number of White students who took at least one AP exam. Furthermore, the Texas APIP had a particularly positive effect on minorities regarding increased SAT/ACT scores. The number of students who scored above an 1100/24 on SAT/ACT rose nearly 100 percent for African American students at these schools, and 50 percent for Latino students (Jackson, 2008). As can be seen, although the AP Incentive Program in Texas has demonstrated broad positive results, the program seems to be particularly effective for those minority and low-income students toward whom the program is directed.

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## Florida

In recent years, Florida has also instituted an effective AP Incentive Program designed to increase participation in both AP programs and postsecondary education by minority and underrepresented students. The program is entitled the Florida Partnership for Minority and Underrepresented Student Achievement (Partnership). The Partnership conducts a variety of services, including teacher training, student skills assessment, and college entrance examination preparation (Florida Statute [F.S.], 1007.35). Table 3 provides information on the exact requirements of the Partnership. The Florida Department of Education has contracted with the College Board to carry out these duties.

Florida's AP incentive program also incorporates financial incentives to teachers and schools for successful AP programs. There is a School Bonus of \$700 per student who passes an AP exam. There is also a \$50 AP Teacher Bonus for every passing student score (up to \$2,000 maximum), as well as a \$500 bonus for the first passing score in a D or F school (up to \$2,000 maximum). Florida is also one of several states to offer free PSATs for all Grade 10 students, the scores of which are used to help identify students likely to succeed in AP courses (Bush, 2009).

The Partnership, which began in 2000, has been effective at increasing AP participation. In 2008, more than 200,000 AP exams were taken in the state of Florida, up from over 50,000 AP exams taken in 1999 (Bush, 2009). The passing scores on AP exams have also drastically increased. In 1999, there were 32,775 passing AP scores, while in 2008 there were 88,279 passing AP scores. This constitutes a 169 percent increase in passing scores in a 10-year period. Although this appears to indicate that more students are finding success in AP courses, when the actual percentage of students who pass AP exams is calculated from the population of AP test takers, results show that success has actually decreased over the decade. In 1999, more than 50 percent of students who took the AP exam passed; while in 2008, less than 50 percent of test takers passed.

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## Rewarding Achievement

In New York City in 2007, a program called Rewarding Achievement (REACH) was established in order to increase AP participation. Launched by The Council of Urban Professionals and The Pershing Square Foundation, this "pay-for-performance" program aims to improve the college preparedness and four-year college graduation rates of low-income high school students, particularly those students from racial and ethnic groups that are underrepresented in higher education (Rewarding Achievement, n.d.). The program is currently being offered in 31 schools with large minority enrollments.

The incentive program works by offering financial rewards, called REACH Scholar Awards, ranging from \$500 to \$1,000 for each AP score of 3 or above. The program also provides students with free AP workshops and other resources to help them succeed. The program additionally rewards the schools with performance-based financial incentives called REACH Bonus Grants, which can be invested to strengthen academic programs, course offerings, and professional development (Rewarding Achievement, n.d.). The results of the program have been positive. The number of AP exams taken at participating schools in the 2008-09 school year rose to 5,436, more than 800 more than the previous academic year. The number of passing grades on AP exams in 2008-09

also rose by 300, to a total of 1,774; however, the passing rate on AP exams only rose slightly, from 32 percent to 33 percent (Medina, 2009).

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## Advanced Placement Expansion Project

Lastly, another incentive program to examine is the large, multi-state incentive program launched by the National Governors Association Center for Best Practices (NGA Center) in 2005. The primary goal of the initiative, known as the Advanced Placement Expansion Project, is to expand the offering of AP courses to minority and low-income students (Wakelyn, 2009). For the initiative, the NGA Center partnered with the College Board to work in one urban and one rural school district in six states: Alabama, Georgia, Kentucky, Maine, Nevada, and Wisconsin.

The Advanced Placement Expansion Project was centered on a framework of three strategies crucial to the vitality of AP programs: expanding access to AP, building teacher and student capacity, and creating incentives for schools and students. Although the NGA Center believes that the combination of these three strategies can produce the best results, the project has allowed states and schools to use their own various data and strategies to recruit students and expand their AP programs (Wakelyn, 2009). In regard to expanding access to AP, for example, Alabama, Kentucky, and Nevada used virtual learning technology to offer AP courses, especially in rural areas in which it is difficult to attract highly qualified teachers. Many states also used PSAT scores to determine and recommend students who are likely to succeed in AP, thereby increasing student participation in AP courses. In order to boost teacher capacity, the NGA Center provided states with the amount of \$300 per teacher for extended learning opportunities, to be used at the discretion of the state. For incentives, schools primarily weighted AP courses on the grade point scale an additional point.

Results of the Advanced Placement Expansion project have proved fruitful in these states, as the number of students taking AP courses at participating schools rose 65 percent from the 2005-06 school year to the 2007-08 school year. Furthermore, the

**Table 3. Florida Statute 1007.35**

The Partnership shall:	
(a)	Provide teacher training to enable teachers of AP or other advanced courses to have the necessary content knowledge and instructional skills to prepare students for success on AP or other advanced course examinations.
(b)	Provide to middle school teachers and administrators professional development that will enable them to educate middle school students at the level necessary to prepare the students to enter high school ready to participate in advanced courses.
(c)	Provide teacher training and materials that are aligned with the Sunshine State Standards and address the skills assessed on the Florida Comprehensive Assessment Test (FCAT).
(d)	Provide assessment of individual strengths and weaknesses as related to potential success in AP or other advanced courses and readiness for college.
(e)	Provide college entrance exam preparation through a variety of means including training teachers to provide courses at schools; training community organizations to provide courses at community centers, faith-based organizations, and businesses; and providing online courses.
(f)	Consider ways to incorporate community colleges in the mission of preparing all students for postsecondary success.
(g)	Provide a plan for communication and coordination of efforts with the Florida Virtual School's provision of online AP or other advanced courses.
(h)	Work with school districts to identify minority and underrepresented students for participation in AP or other advanced courses.
(i)	Work with school districts to provide information to students and parents that explains the available opportunities for students to take AP and other advanced courses, the value of such courses, and enrollment procedures that students must follow to enroll in such courses.
(j)	Provide information to students, parents, teachers, counselors, administrators, districts, community colleges, and state universities regarding PSAT/NMSQT or PLAN administration.
(k)	Cooperate with the department to provide information to administrators, teachers, and counselors, whenever possible, about partnership activities, opportunities, and priorities.

percentage of students at participating schools who scored 3 or better on the exam increased 1.7 percent during this time frame. Minority student enrollment in AP courses also rose an impressive 106 percent during this two-year time period, significantly reducing the large equity gap in the AP courses at participating schools. In the 2007-08 school year, minority students accounted for 29 percent of students taking AP courses and 41 percent of the student body population as a whole in the participating schools. This percentage is up from 23 percent of minority students taking AP courses in the 2005-06 school year (Wake-lyn, 2009).

**AP INCENTIVE PROGRAM RESEARCH**

Although research on the effects of Advanced Placement courses and programs is extensive and indicates that AP course work has numerous benefits, research on the incentive programs that attempt to promote AP participation and increase success rates is quite limited. Little is known about what factors are most effective at increasing participation while maintaining or increasing success rates in AP.

One study recently commissioned by the Thomas B. Fordham Institute (2009) surveyed more than 1,000 AP teachers across the U.S. for the purpose of analyzing AP growth in recent years to determine what

factors are driving the growth, and what the consequences of such growth are. Despite the low response rate (20%), results of the study suggest that, in general, AP teachers feel that the students, rather than the school, are most responsible for the growth of AP; twice as many surveyed teachers believe that the growth of the AP program in their schools is determined by the level of demand and abilities of the students rather than by the policies of the school system and administrators. The majority of teachers, in fact, believe that the primary driver of increased AP growth nationwide is pupil pragmatism. Most teachers (90 percent) believe that AP programs have been growing steadily in recent years because there are more students who want their college applications to look better. Furthermore, 58 percent of teachers feel the growth is caused by more students who want to save money or graduate faster from college by getting AP credits. Only 32 percent of teachers feel that AP program growth is due to more students who want to be challenged at a higher academic level. Although utilitarian motives may be the predominant factor in the growth of AP, the researchers do not see this as a negative sign. They write, “Given a set of real-world incentives, many more students are choosing a course of study that means working harder, taking an extra test, and challenging themselves more. Their motives may be less than pure, but the outcome—increased effort—is constructive” (Thomas B. Fordham Institute, 2009).

More than half of the teachers in the study also stated the belief that too many students in AP are overestimating their abilities, and even more feel that many parents push their children into AP classes where they do not belong. These may be negative factors contributing to the decline in the quality of AP students, as 39 percent of surveyed AP teachers indicated that the quality of the AP students in terms of their aptitude and capacity to do the work has declined, while only 16 percent indicated that the quality of students has increased. Nevertheless, this trend has not affected the quality or content matter of most AP courses, as 84 percent indicated that the level of difficulty and complexity of the material covered in the AP course has stayed the same or become more difficult (Thomas B. Fordham Institute, 2009). Although the qualitative data from AP teacher surveys have provided good information regarding the perceived growth of AP and the consequences of this growth, no quantitative student achievement data were gathered with which to compare the perceptions of AP teachers. Thus, it is difficult to determine the actual effects of the growth of AP and how this compares to teachers’ perceived notions.

C. Kirabo Jackson has conducted several studies on the Texas APIP to determine the effects of AP incentive programs in regard to student achievement (Jackson, 2008; Jackson, forthcoming). He concluded that the incentive program in Texas is indeed associated with increases in the number of



students taking AP courses and the corresponding exams, with substantial increases for African American and Latino students. Furthermore, the incentive program is also associated with improvements in both SAT and ACT performances across all ethnic groups and has been shown to increase the number of students who matriculate to college. He argues that his findings at schools participating in the Texas APIP reveal that “a well-designed cash incentive program for students and teachers can improve both short- and long-term outcomes” (Jackson, forthcoming). Although his study has only been conducted on the AP incentive program of Texas, it can be speculated that states that adopt similar AP incentive programs may see similar results.

Certainly there is no one best type of incentive program, but, in general, successful AP incentive programs should emphasize and support the factors needed to maintain a successful AP program. A research study conducted by Furry and Hecsh (2001) examined the factors that led to success in AP courses offered in the state of California. They found a number of factors strongly associated with success in Advanced Placement programs across the state. Such factors include:

1. Teachers in higher-performing classes met often with teachers from their feeder schools.
2. Adequate preparation for students before entering an AP course is essential, as teachers in higher performing AP classes are less likely than teachers in lower-performing classes to see consistent deficiencies in the student preparation for the AP class.
3. Highly qualified students are necessary for high-performing classes; more teachers in high-performing AP classes indicated that they denied AP admission to unqualified students.
4. There should be strong support from the principal for the AP program, especially in schools with low socio-economic status (SES) levels.
5. There should be pressure from the administration to achieve high AP exam scores.
6. Higher performing classes have teachers with more years of experience teaching the AP subject.
7. There is a link between high-performing classes and the teacher’s possession of a doctorate.

8. Students in higher performing AP Calculus classes had greater access to graphing calculators than students in lower performing AP Calculus classes.

Although the researchers studied many different factors that have often been attributed to successful AP programs, these factors were the only ones consistently associated with high class performance on AP exams when results were based on performance comparisons controlling for the SES level of the school. Some of the factors that the researchers found to be inconsistently associated with high AP performance included: teachers’ possessions of master’s degrees; attendance(s) at AP summer institutes or workshops; admittance into AP classes based on grade achieved in a prerequisite course, teacher recommendation, or exam score; requirements to take AP exams; faculty attitude toward AP; parent knowledge of AP benefits; mean years teaching; and class size.

There is some evidence that AP courses may not meet the needs of many high ability students. A survey of current and former AP students (Hertberg-Davis and Callahan 2008) indicated that many gifted students thought AP classes, though academically challenging, had an excessively rigid curriculum that was ill-suited to students with different learning styles or background knowledge. In addition, lower-income and minority students often felt socially isolated in AP classes. Both problems contributed to higher course drop-outs.

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## CONCLUSIONS AND RECOMMENDATIONS

The outcomes of various incentive programs and subsequent research reveal that in order for AP incentive programs to be successful, education leaders must take into consideration all facets of AP programs and coursework. That is to say, in offering financial, accountability, and scholarship incentives, AP programs must ensure that schools are properly equipped, teachers are properly trained, and students are properly prepared to cope with the rigor associated with successful AP programs. The following recommendations will be broken down into these three categories: students, teachers, and schools.

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## Students

### Conclusion

Through the efforts of federal, state, and local education agencies, participation in AP courses and exams has gradually increased over the years; however, more work still needs to be done. Equity remains a primary concern. Although many states have had success in increasing the proportion of students who take AP exams, in many instances the percentage of students who actually pass the AP exam is in decline. Research also suggests that many AP courses do a poor job of recruiting and retaining underrepresented students and fail to address the diverse needs of students. However, some models of AP incentive programs (Texas, New York City, and the AP Expansion Project) have demonstrated success in increasing the participation and improving the performance of low-income and minority students.

### Recommendation

At the district level, the campaign for promoting AP courses should be schoolwide, involving teachers and guidance counselors as well as principals and other administrators. Measures should be taken to identify students who will be likely to succeed in AP courses, such as using PSAT scores, and barriers that hinder students taking AP courses, such as class rank, should be removed. Guidance counselors and teachers should promote to students the benefits which AP courses can offer, such as college credit and possible scholarships, while dispelling common misconceptions students may have. And in general, attempts should be made at creating a culture of high-expectations among all students. This is particularly important for minority and low-income students. In order to create fairness and equity in AP, incentives programs should focus on those students who have traditionally been underrepresented in AP courses. Methods for seeking out and encouraging minority and low-income students should be promoted. The College Board recommends, for instance, recruiting minority students in groups, so that students know they can turn to their peers for academic support (College Board, 2002). When possible, financial assistance should also be provided for subsidizing the AP testing fee for low-income students.

## Recommendation

When offering financial incentives to students to take AP courses, states and districts need to ask themselves: How much financial incentive is needed to really be an incentive to students? Since students must devote more time and effort into AP courses, they will have less time to spend participating in extracurricular activities, such as sports, band, and jobs. Financial incentives for some students may need to offset the financial loss taken as a result of reduced part-time job hours. This dilemma was encountered by the personnel team of the REACH program in New York City. Accordingly, the REACH team consulted with various experts to determine the amount of money that would provide the appropriate incentives for students, and settled on amounts ranging from \$500 for a score of 3 to \$1000 for a score of 5 on the AP exam (Rewarding Achievement, n.d.).

## Recommendation

The implementation of AP incentive programs frequently results in higher participation in AP courses, as well as increases in AP exams taken; however, the success rate of students, that is to say the percent of students receiving a 3 or above on the AP exam, often stays the same or even decreases. This may be due to the fact that AP incentive programs may entice students who might not be fully prepared to handle the rigors of the AP curriculum to register for these courses. Thus, in order to raise the percent of successful AP exams, an emphasis needs to be placed on preparing students for these courses. Schools and districts should consider improving the rigor of the curriculum in earlier grades to help students to prepare for AP and providing differentiated instruction so that students from a variety of backgrounds are able to take advantage of AP programs.

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## Teachers

### Conclusion

Some existing AP programs have been criticized for uneven teacher quality, an excessively rigid curriculum, and too great an emphasis on the utilitarian benefits of AP classes (saving money on college coursework, improving prospects for attending an elite institution, and long-term job oppor-

tunities). The provision of financial rewards to teachers and students as rewards for high AP grades could exacerbate these problems by causing teaching to become overly focused on test-taking rather than knowledge and skill development — a criticism that has already been laid against school districts trying to meet AYP.

## Recommendation

Incentive programs must also ensure that teachers have the necessary training to teach AP courses. For AP program success, the curricula of AP classes should be consistent with the research regarding the way students learn. Well-designed courses help students develop skills of inquiry, analysis, and problem solving in order to become superior and sustainable learners. Curricula should account for the student's prior knowledge and misconceptions in building a conceptual structure, stressing student motivation, and metacognition, as well as accounting for learning differences from student to student. Simply presenting students advanced materials at an accelerated level is neither a sufficient nor suitable strategy for preparing students for post-secondary education (Gollub, Bertenthal, Labov, & Curtis, 2002.) Proper teacher training is essential, but, as of 2006, only half of the states provide programs and funding for AP teacher training (ECS, 2006). In addition, the curriculum must emphasize not just the long-term material benefits to be gained from AP programs but also the value of challenging courses for their own sake.

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## Schools

### Conclusion

Schools must also have the capacity and resources to handle expanding AP courses. Some schools may lack the finances and resources necessary for AP coursework, such as lab materials for AP sciences or graphing calculators for AP Calculus. Such deficiencies place AP students at a severe disadvantage and result in programs which are unsuccessful and unsustainable. Furthermore, without proper planning and resources, the structure of the AP program and corresponding incentives can overwhelm the intended purpose of such classes-to learn.

A prime example of this can be found in course credit inflation, in which students

are given credit for a class but did not, in fact, learn at the level at which they were supposed to learn. Students may not master the course for which they received credit and may require remediation at the college level. Research on remediation reveals that significant numbers of students may still need remediation in one or more courses upon entering higher education. In Texas, for example, approximately 60 percent of low-income students, African American students, and Latino students, and approximately 30 percent of White students and non-low income students, all of whom graduated under the state's college preparatory program in 2000, needed remediation in one or more subjects at the college level (Dougherty, Mellor, & Jian, 2006b). As stated above, successful AP incentive programs must keep the needs of the schools, in addition to teachers and students, in mind as they promote increased participation and expansion in AP coursework. An incentive program that pushes schools lacking the capacity to deal with an increased AP program may end up doing more harm than good.

## Recommendation

Although many states across the country have increased spending on AP programs, money may still be a factor in expanding and sustaining AP programs. Many school district budgets may still come up short when attempting to provide all the necessities involved in maintaining a successful AP program. Financial incentives, like the one offered by the federal government, help, but other avenues need to be sought out. One such avenue schools or districts should consider is working in coordination with virtual schools to offer students AP courses which the school itself cannot provide. Such a solution has been utilized in a number of states, including Alabama, Kentucky, Nevada, and South Dakota. These states have expanded their virtual-learning programs in order to increase student access to AP courses. Indiana has several virtual learning providers which offer a range of the most common AP courses, including Indiana Online Academy, Indiana Virtual Academy, Indiana University High School, and the Indiana Academy for Science, Mathematics, and Humanities.

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## ACKNOWLEDGEMENTS

The authors gratefully acknowledge **Ivonne Jaime**, U.S. Department of Education, for her information and professional input. In addition, the authors would like to thank **Bridget Schleich**, **Kelly Cable**, **Fatima Carson**, and **Ruiting Song** of the Center for Evaluation & Education Policy for their document review and edit suggestions.

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## WEB RESOURCES

**Indiana General Assembly: Title 20. Education, Article 36. High Ability Students**

<http://www.in.gov/legislative/ic/code/title20/ar36/>

**The College Board: AP Central**

<http://apcentral.collegeboard.com/apc/Controller.jspf>

**U.S. Department of Education: Advanced Placement Incentive Program Grants**

<http://www.ed.gov/programs/apincent/index.html>

**U.S. Department of Education: Advanced Placement Test Fee Program**

<http://www.ed.gov/programs/apfee/index.html>

**National Governors Association: Center for Best Practices**

<http://www.nga.org/portal/site/nga/menuitem.50aeae5ff70b817ae8ebb856a11010a0>

**Selected Works of C. Kirabo Jackson**

[http://works.bepress.com/c\\_kirabo\\_jackson/](http://works.bepress.com/c_kirabo_jackson/)

**Education Commission of the States: High School Database: Advanced Placement**

[http://www.ecs.org/html/educationissues/HighSchool/highschooldb1\\_intro.asp?topic=ap](http://www.ecs.org/html/educationissues/HighSchool/highschooldb1_intro.asp?topic=ap)

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Education Policy Briefs are executive edited by Jonathan A. Plucker, Ph.D. and published by the

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