

# COMMISSION FOR HIGHER EDUCATION

Friday, April 14, 2000

## **DISCUSSION ITEM A:                    1999 Advanced Placement Program: Ten-Year Progress Report**

### **Staff Recommendation**

For information only.

### **Background**

In 1990 the Indiana General Assembly established and funded an Advanced Placement (AP) program. Under the program, the State pays test fees for students who sit for AP tests in selected subjects. It also supports professional development for teachers of AP classes. Today's report summarizes Indiana's experience with the AP program over the past ten years.

Nationally, the AP program provides opportunities for high school students to study subjects taught more rigorously than usual and to earn college credit by taking the appropriate AP examinations and scoring 3 or above on a 5-point scale. Through regional offices the program offers course syllabi, workshops and summer institutes for teachers, and 33 different AP tests for students.

Indiana's Advanced Placement program has grown from 2,316 participating students in 1990 to 9,674 participants in 1999. Most Indiana students who take AP courses also sit for the corresponding AP examinations. One result of the increase in participation has been the large number of Indiana test takers who score at the lowest levels of 1 or 2. These scores do not earn college credit.

As the report indicates, Indiana Advanced Placement test scores are slowly going up. They still, however, lag behind what program supporters would like to see. One exception to this is the performance of students from Terre Haute South Vigo High School. In 1999, forty-eight percent of all Indiana AP exam takers from public schools received grades of 3 or higher. At South Vigo, the corresponding number was 69 percent. The school's principal and two teachers are with us today to share some of their thoughts about the Advanced Placement program.

### **Supporting Documents**

- (1) *Indiana Advanced Placement Program: Ten-Year Progress Report*, April 14, 2000.
- (2) Terre Haute South Vigo High School, *College Board Advanced Placement Scores*.

## **Indiana Advanced Placement Program: Ten-Year Progress Report**

April 14, 2000

### **College Board's Advanced Placement Program**

Sponsored by the College Board, the Advanced Placement (AP) Program began in 1955. Today it offers 33 college-level courses and examinations in 19 subject areas. An immediate purpose is to expose high school students to courses that are challenging enough to persuade colleges and universities to award credit for achievement above a certain level. The longer-range purpose is to help raise academic standards by engaging more students in rigorous study. This is done primarily through professional development and teacher interaction. As more teachers master the teaching of Advanced Placement courses, and learn to prepare students in earlier grades to be ready for AP work when they reach high school, classroom learning throughout schools and school districts is strengthened.

Although the first AP participants came from independent preparatory and public suburban schools, the program strives to reach students in urban and rural schools as well. Over one million AP exams are now administered each year. In 1999, fifty-five percent of all AP test takers were female. Sixty-nine percent were white.<sup>1</sup>

Course and test development is a collaborative enterprise that takes several years. For each prospective course, the College Board appoints a development committee of college faculty and high school teachers. Working over a two or three year period, the committee decides the content of the forthcoming AP class and the ability level that will be tested. Members help write test questions, review pretests, and finally approve the AP exam. They also review and help write descriptive materials for students, teachers, and colleges. One of the newest courses, AP World History, was authorized in January 1999 and will be taught for the first time in 2001-02. The AP World History exam will be administered for the first time in May 2002.

Advanced Placement examinations combine multiple choice and free response items. Tests are approximately three hours long, and divided in proportions that vary by discipline (from 60:40 to 45:55) between the two types of questions. Free-response sections are graded by faculty consultants, either high school teachers or college faculty. Consultants come together each June for the national AP Reading. In June 2000, approximately 5,000 faculty consultants will convene in six locations to read and score some four million essays, solutions to problems, audiotaped responses, and works of art.

To support teachers of advanced placement courses, College Board offers many resources pertaining to professional development. These include workshops and summer institutes; specialized school and district support; materials in print, on-line or CD-ROM format; on-line discussion groups; and detailed descriptions of Advanced Placement practices and courses.

The College Board also serves as a resource for state-supported AP programs. Twenty-six states and the District of Columbia now offer such programs. Most commonly, they pay all or some Advanced Placement exam fees for students. Fifteen states including Indiana and the District of Columbia do this. Two states and the District pay fees for all students<sup>2</sup>; Indiana pays fees for all students in specific subject

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<sup>1</sup> The percentage is based on the number of test takers who identified themselves with particular ethnic groups. Not all test takers did so.

<sup>2</sup> The two states are Georgia, and Minnesota. South Carolina pays fees only for juniors and seniors. Texas pays full fees for low income students and partial fees for all others.

areas. Other states pay fees for low-income students, or for students who meet proficiency criteria. State-level programs may also include professional development – the second most common area of funding – and/or tuition reduction, fee reimbursement, equipment grants, school incentives, and special diplomas. Some states publish the AP policies of their colleges and universities. Others mandate colleges' acceptance of AP scores. Still others, including Indiana, work with the College Board to provide recognition of AP Scholars, students who have earned high grades on multiple Advanced Placement exams. Nationally, 34 states including Indiana benefit from a federal grant program that pays test fees for low income students.<sup>3</sup>

Teacher workshops of one or two days are offered year-round at sites in the United States and abroad. Summer institutes last one or two weeks. Both types of activity are organized and run by College Board staff and/or postsecondary institutions. Each is funded through some combination of participant fees, state appropriations, and grants or donations. Each event focuses on an AP subject, specialized training in a particular discipline, or management of an AP course.

Two types of professional development, in particular, focus on entire schools and school systems. *Building Success* is a pre-Advanced Placement program. In chunks of time ranging from two to five days, it offers teachers interactive instructional strategies to motivate all students to succeed. *Vertical Teams* bring together teachers from high school and middle school for discipline-specific conversations about how to prepare students to succeed in Advanced Placement courses. The intent is to align curriculum across grade levels to help students acquire the academic skills AP courses require.

### **Advanced Placement in Indiana**

*Program Size.* In 1990, the year the General Assembly created Indiana's Advanced Placement Program, 153 of the State's high schools offered Advanced Placement courses and exams. That spring, 2,316 students took 2,975 tests. Indiana's legislature instructed every public high school to offer Advanced Placement courses in mathematics (Calculus) and science (Biology, Chemistry, Physics) by 1994-95. The state began to pay test fees for students who completed these AP courses and took the appropriate exams.<sup>4</sup> English Language & Composition was added to the list in 1994. Students from non-public schools were made eligible for state-paid test fees in 1997.

In 1999, three hundred seven Indiana high schools offered Advanced Placement classes. Of the students who enrolled, 9,674 took 14,488 AP exams. Although the State paid test fees only for students who took eight "authorized" exams,<sup>5</sup> Indiana students actually sat for 31 different tests. Table 1 shows the growth of Indiana's participation in Advanced Placement testing. The numbers include both public and non-public schools. In 1999, eighty-six percent of Indiana's AP examinations were taken by public school students.

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<sup>3</sup> Indiana uses federal funds to pay test fees for low-income students who have completed AP courses in subjects other than those addressed by the State's AP program.

<sup>4</sup> The College Board defines what Advanced Placement courses should consist of. School corporations decide which of their courses will be identified as AP courses.

<sup>5</sup> Biology, Chemistry, Math (Calculus AB, Calculus BC), Physics B, Physics C (Mechanics), Physics C (Electricity and Magnetism), and English Language & Composition.

*Table 1*  
**Indiana's Advanced Placement Program, 1990-1999**

<u>Year</u>	<u>Schools</u>	<u>Candidates</u>	<u>Exams</u>
1990	153	2,316	2,975
1991	224	5,164	7,009
1992	243	5,976	8,176
1993	266	6,938	9,421
1994	286	8,309	11,738
1995	307	9,126	13,265
1996	302	9,674	14,263
1997	306	8,965	13,132
1998	311	9,294	13,844
1999	307	9,674	14,488
<b>10 Yr Chg</b>	<b>101%</b>	<b>318%</b>	<b>387%</b>

*Funding.* The General Assembly funded Indiana's Advanced Placement program at \$550,000 per year. An additional \$50,000 was added when the State began paying test fees for students enrolled in non-public schools. The statute says funds may be used to pay, in priority order, AP test fees for Indiana students, professional development stipends for AP teachers, appropriate instructional materials, the purchase or rental of needed equipment, and costs incurred in implementing AP courses in subjects other than math and science. Over time, the first priority cost – AP test fees – has consumed more and more of the available funds. Advanced Placement appropriations do not revert at the end of each fiscal year, but may be retained for future use.

Drawing on accumulated funds, in 1998-99 Indiana spent \$665,228 on AP test fees. An additional \$68,750 purchased 125 “places” at Indiana-based AP workshops and institutes. Funds were paid, not to teachers, but to the public and independent institutions that provided the professional development opportunities. The figures mean that last fiscal year Indiana spent \$134,000 more on the AP program than the year's appropriation had provided. Within current levels of funding, by 2001 Indiana's Advanced Placement program will not have enough revenue to pay test fees for all students.

*Program Scores.* Advanced Placement tests are graded or scored on a five-point scale. Five is the highest grade one can earn. By and large, colleges and universities confer advanced placement for grades of 3 or above. Table 2 shows the distribution of Indiana's Advanced Placement scores for each of the ten years 1990 through 1999. The table reports grades earned by public school students in all the AP examinations they took each year.

In 1990, before the statewide program began, 61 percent of the AP exams taken by Indiana public high school students received scores of 3 or higher. In 1991, the first year Indiana paid test fees, the number of AP exams taken more than doubled. The proportion of exams receiving grades of 3 or higher fell to 37 percent. Sixty-three percent of Indiana's AP exams that year were graded 1 or 2. These grades are below the threshold at which colleges and universities will confer college credit.

Table 2  
**Indiana Advanced Placement Scores, 1990-1999**  
(Public High School Exam Grades Only)

<u>Year</u>	<i>Total Public</i>		<i>Proportion with Grade of</i>				<i>Subtotals (%)</i>	
	<u>AP Tests</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>5-3</u>	<u>2-1</u>
1990	2,333	0.099	0.182	0.330	0.275	0.114	61%	39%
1991	6,286	0.051	0.102	0.222	0.270	0.356	37%	63%
1992	7,380	0.054	0.109	0.209	0.272	0.356	37%	63%
1993	8,545	0.059	0.116	0.226	0.257	0.343	40%	60%
1994	10,720	0.064	0.117	0.232	0.279	0.307	41%	59%
<b>5 Yr % Change</b>							<b>-32%</b>	<b>51%</b>
1995	12,116	0.054	0.115	0.221	0.283	0.326	39%	61%
1996	12,812	0.052	0.116	0.228	0.291	0.313	40%	60%
1997	11,576	0.056	0.125	0.259	0.287	0.273	44%	56%
1998	11,960	0.068	0.144	0.264	0.288	0.235	48%	52%
1999	12,457	0.077	0.144	0.259	0.296	0.224	48%	52%
<b>5 Yr % Change</b>							<b>23%</b>	<b>-15%</b>

The high proportion of exams receiving 1 and 2 grades is a problem with which the State continues to wrestle. Progress is being made, but it comes slowly. In 1997, school administrators were urged to use their best judgment about which students were adequately prepared to take Advanced Placement exams. Also in 1997, for the first time since Indiana's program began, the number of AP test takers declined. Over the past five years the proportion of students receiving grades of 3 and above has increased by 23 percent. In 1998 and again in 1999, the proportion of exams receiving grades of 3 and above reached 48 percent. When scores from non-public school students are factored in, the proportion becomes 51 percent.<sup>6</sup>

*Subject Area Scores.* Indiana's AP Program pays test fees specifically for Advanced Placement exams in mathematics, the sciences, and English Language & Composition.<sup>7</sup> Most of the exams administered in these subjects cover Calculus AB,<sup>8</sup> Chemistry, Biology, Physics B,<sup>9</sup> and English. Table 3 summarizes how Indiana students have fared in these tests. The table shows test grades for public school students only.

<sup>6</sup> As an example of current practice regarding test-taking, 4,690 students enrolled in what the Department of Education calls Biology Advanced Placement/College Credit in 1998-99. In May 1999, 1,204 students took the Advanced Placement test in Biology.

<sup>7</sup>The Department of Education does not recognize any specific English/Language Arts course as Advanced Placement/College Credit. Instead, school corporations decide which courses will be so designated.

<sup>8</sup>The other AP mathematics examination is Calculus BC.

<sup>9</sup> There is no Physics A. There is a Physics C, which is covered by two AP examinations, one focused on mechanics and the other on electricity and magnetism.

Table 3  
**Indiana AP Scores by Subject, 1990-1999**  
 (Public High School Exam Grades Only)

Year	Calculus AB		Biology		Chemistry		Physics B		English Lang & Comp	
	Exams	% 3-5	Exams	% 3-5	Exams	% 3-5	Exams	% 3-5	Exams	% 3-5
1990	252	72%	121	49%	104	54%	26	23%	141	66%
1991	1,796	36%	900	27%	1,014	18%	458	21%	160	66%
1992	2,229	35%	929	24%	1,176	22%	541	13%	239	62%
1993	2,768	40%	1,052	30%	1,293	22%	525	25%	282	55%
1994	3,121	40%	1,346	31%	1,383	23%	629	29%	1,577	50%
<b>5 Yr % Change</b>		<b>-45%</b>		<b>-37%</b>		<b>-57%</b>		<b>24%</b>		<b>-24%</b>
1995	3,308	36%	1,325	38%	1,566	27%	536	23%	2,424	37%
1996	3,278	36%	1,579	32%	1,409	22%	519	33%	2,710	44%
1997	2,977	35%	1,363	39%	1,263	29%	348	40%	2,359	52%
1998	2,953	45%	1,314	37%	1,090	32%	460	43%	2,684	54%
1999	3,041	41%	1,204	44%	1,225	31%	456	41%	2,883	51%
<b>5 Yr % Change</b>		<b>14%</b>		<b>18%</b>		<b>16%</b>		<b>78%</b>		<b>40%</b>

Scores earned in these specific tests reflect the chronological pattern shown by all Indiana AP examinations. Biology, Calculus and Chemistry scores were comparatively high in 1990, collapsed by 50 percent or more in 1991, and have moved upward over the past five years. The Physics B exam, which is taken by relatively few students, has a different score history. Here the percentage of scores of 3 and above started low but rebounded quickly, increasing by 24 percent within the first five years and by 78 percent between 1995 and 1999. Only in AP Physics were exam grades higher in 1999 than they had been in 1990.

Indiana began paying test fees for AP English Language and Composition in 1994. For reasons not explained by available evidence, scores on this examination had been declining even while the number of test takers remained low. After two more years of decline, these scores, like the others, began to rise.

*Professional Development.* Indiana encourages professional development for Advanced Placement teachers by paying colleges and universities so many dollars per participant to help underwrite the cost of summer institutes. In 1999, the payment per participant was \$550. The State does not pay stipends to teachers who enroll. Last summer four Indiana institutions and the Indiana Academy provided AP summer institutes in the following subjects; Indiana University stopped offering them in 1998.

- *Ball State University* – Physics B and Physics (both)
- *Butler University* – Biology, Calculus AB and BC, Chemistry, English Language and Composition, Physics (both)
- *Indiana Academy (BSU)* – Biology, Calculus AB, Chemistry, English Language and Composition, Environmental Science, and Physics B
- *Purdue University* – Biology, Calculus AB and BC, Chemistry, Environmental Science, Physics (both)

- *Saint Mary's College – Biology, Calculus AB, Chemistry, Economics (both), English (both), European History, French Language, Government & Politics: Comparative, Psychology, Statistics*

The number of Indiana teachers who participated in the 1999 summer institutes is not precisely known. The State paid the institutions for 125 teachers' enrollment. Four of the five sites served 224 teachers, 125 of whom were from Indiana. Two hundred fifty-four teachers filled out post-institute evaluation forms.

A handful of workshops in *Building Success* and vertical teaming were held in Indiana in the spring of 1999. None have taken place since July 1. One *Building Success* workshop is scheduled for May and an *English Vertical Team* workshop, for October 2000. Both of these will be held in Terre Haute.

*Student Recognition and School Success.* The College Board encourages recognition of students who do well on Advanced Placement examinations. It does this by identifying three levels of accomplishment and celebrating them at official AP events. Students who earn grades of 3 or higher on *three* or more full-year AP exams are recognized as AP Scholars. Students who earn grades of 3 or higher on *four* or more exams, with an average exam grade of 3.25, become AP Scholars with Honor. Students who earn grades of 3 or above on *five* or more full-year exams, with an average exam grade of 3.5, become AP Scholars with Distinction.

Indiana has worked with the College Board's Midwestern Office to sponsor two AP Scholars receptions. In the fall of 1999, one hundred nine AP Scholars and their families were recognized at a Scholars Reception held in the Supreme Court Chambers of the State House. The students represented 30 public and non-public schools. Twelve attended one public school, Terre Haute South Vigo High School.<sup>10</sup> Eight of them were recognized as AP Scholars, three as AP Scholars with Honor, and one as an AP Scholar with Distinction.

South Vigo High School is located on south Seventh Street, not far from the intersection of I70 and US41. It enrolls approximately 1900 students in grades 9 through 12. If you visit its Web site, the first news to catch your eye is about academic accomplishment. For example, in May 1999 at the Hoosier Academic Super Bowl, student teams from South Vigo won state championships in mathematics and in science. Other featured competitions included Junior Engineering (JETS), the State Science Olympiad, and an Academic Decathlon.

The school is also one place where Indiana's Advanced Placement program is working well. In 1999, one hundred fifty eight South Vigo students took 290 AP exams in 18 fields.<sup>11</sup> Sixty-nine percent of them received grades of 3 or higher. Advanced Placement *Candidate Grade Rosters* for South Vigo High School for 1998 and 1999 are attached to this report.

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<sup>10</sup> Only Park Tudor School provided more AP Scholars than South Vigo. The other schools represented by at least ten AP Scholars were North Central High School and Bloomington South High School.

<sup>11</sup> U.S. History, Biology, Chemistry, Computer Science A and AB, Economics – Micro, English Language & Composition, English Literature & Composition, Environmental Science, European History, Government & Politics – U.S., Calculus AB and BC, Physics B and C (Mechanical), Psychology, Spanish Language, and Statistics.