

DOCUMENT RESUME

ED 357 684

HE 026 431

AUTHOR Merisotis, Jamie  
 TITLE Factors Affecting Minority Participation in Higher Education: A Research Synthesis. Symposium on Information Resources Services, and Programs. Background Paper Number One.  
 INSTITUTION Advisory Committee on Student Financial Assistance, Washington, DC.  
 PUB DATE May 90  
 NOTE 47p.; For related documents, see HE 026 428-443.  
 PUB TYPE Information Analyses (070) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.  
 DESCRIPTORS \*Academic Achievement; At Risk Persons; De Facto Segregation; Dropout Rate; Economically Disadvantaged; Elementary Secondary Education; Higher Education; \*Minority Groups; \*Participation; \*Postsecondary Education; Racial Relations; School Holding Power

ABSTRACT

This paper serves as a basic introduction to the problems associated with minority participation in postsecondary education. It focuses on those educational factors identified in the literature as having an important effect on postsecondary participation by minorities. The paper shows that the problem of minority participation is a far-reaching and complex one. At each of several critical junctures--high school graduation, college enrollment, college degree attainment, and selection of non-college alternatives--the data suggest that some number of at-risk disadvantaged youth are lost to the educational system and the labor market. Further, the paper suggests that, though the literature makes clear that the problem is a complex one, it is also reasonable to conclude that isolation and segregation of minority children, whether it be in communities, inner city schools, academic ability groups, or predominantly white colleges, has a pernicious effect on successful minority participation in higher education. The paper further argues that the earlier this isolation or segregation occurs, the more negative effects it appears to have on the postsecondary planning of minority youth. Eight figures appear in the text and an appendix offers five statistical tables. (Contains 49 footnotes.) (JB)

\*\*\*\*\*  
 \* Reproductions supplied by EDRS are the best that can be made \*  
 \* from the original document. \*  
 \*\*\*\*\*

ED357684

**SYMPOSIUM ON INFORMATION RESOURCES, SERVICES, AND PROGRAMS**

**Background Paper Number One**

**Factors Affecting Minority Participation  
in Higher Education: A Research Synthesis**

May 1990

**Advisory Committee on Student Financial Assistance**

U.S. DEPARTMENT OF EDUCATION  
Office of Educational Research and Improvement  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

AE 026 431



**Factors Affecting Minority Participation  
in Higher Education: A Research Synthesis**

**Jamie Merisotis  
Consultant**

**Prepared for the  
Advisory Committee on Student Financial Assistance**

**May 1990**

## I. INTRODUCTION: DESCRIBING THE PROBLEM

Increasing the participation of low income and disadvantaged students in postsecondary education has been a primary goal of federal, state, and institutional policies for much of the latter half of the twentieth century. In striving to achieve this goal, a myriad of programs and policies have been implemented, ranging from counseling and information programs to direct federal assistance for historically black colleges and universities to student financial assistance. The federal government has played an especially important role in coordinating or leveraging many of these efforts and providing much of the funding.

Despite these significant steps, there is growing concern that the effect of these policies and programs has been negligible on minorities and other disadvantaged students. While many in the political arena have attempted to put their own "spin" on the research evidence, the problem is unambiguous: even though there has been a slight upturn in the rates of high school graduation in recent years, collegiate participation by minority students has not noticeably improved in the last two decades, and has likely declined since the middle 1970s. At the same time, minorities continue to earn a significantly smaller share of bachelor's degrees conferred relative to total

undergraduate enrollment. These findings have led to lengthy debate about the education system's commitment to improved minority participation and the effectiveness of various policies and programs.

This paper serves as a basic introduction to the problems associated with minority participation in postsecondary education. It focuses on those educational factors identified in the literature as having an important effect on the postsecondary participation by minorities. Companion documents to this report review the level and quality of information available to parents and students, information programs and other intervention strategies that have been developed, and the federal role in early information resources and programs.

The Advisory Committee on Student Financial Assistance has been directed by the Congress of the United States to "make recommendations that will result in the maintenance of access to postsecondary education for low- and middle-income students." The Committee has been further charged with the responsibility to "appraise the adequacies and deficiencies of current student financial aid information resources and services and evaluate the effectiveness of current student aid programs." This paper represents the first step in the Committee's efforts to fulfill these obligations.

The data indicate that the problem of minority participation in postsecondary education is a far-reaching and complex one. At each of several critical junctures--high school graduation, college enrollment, college degree attainment, and non-college alternatives--the data suggest that some number of at-risk disadvantaged youth are lost to the educational system and the labor market. Further, exploring the problem of minority participation is made more complex by the fact that different researchers have used different modes of analysis and age groupings to examine the problem. Nevertheless, the general trends are the same. Problems associated with minority participation in postsecondary education can be traced to all points in the educational process.

### High School Graduation

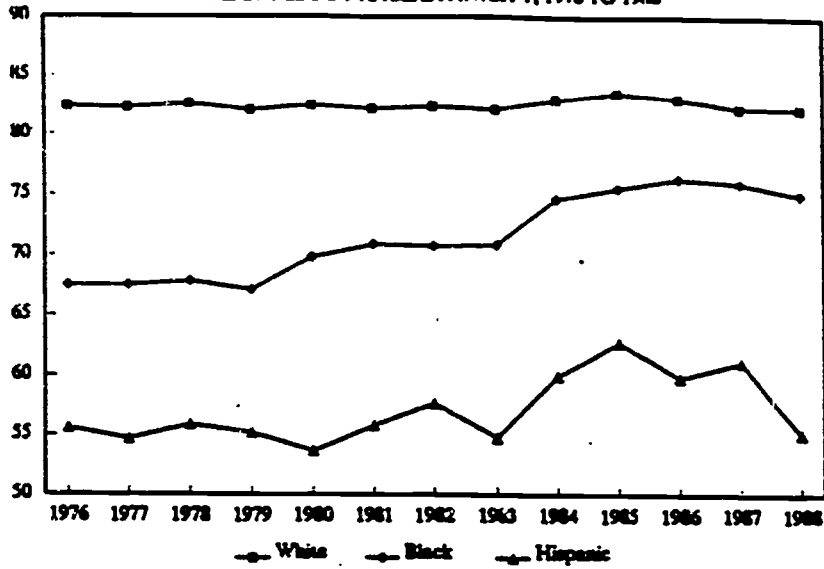
Data on high school graduation indicate that rates have improved in recent years. Still, graduation rates for minority students, especially those from low income backgrounds, trail those for white students. More specifically, data on high school graduation show that:<sup>1</sup>

---

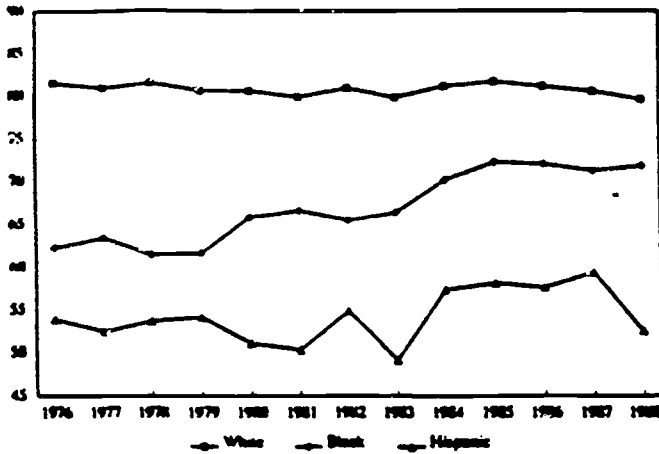
<sup>1</sup> Unless otherwise noted, data and information below are derived from two sources. Data on 18 to 24 year old high school graduation and college participation, as well as retention, completion, and degree attainment, are found in Deborah J. Carter and Reginald Wilson, "Eighth Annual Status Report: Minorities in Higher Education," American Council on Education Office of Minority Concerns, December, 1989. All other high school graduation and collegiate participation data are found in U.S. Department of Education, Office of Educational Research and Improvement, The Condition of Education 1989 (Washington, DC: National Center for Education Statistics, 1989). See the Appendix for data tables regarding high school graduation and collegiate participation.

- While overall high school graduation rates for 18 to 24 year old whites remained static from 1976 to 1988 (hovering around 82 or 83 percent), those for blacks increased significantly, from 67 to 75 percent, while those for Hispanics fluctuated between 55 and 60 percent. [Figure 1] Virtually the same trends have been noted for other age groupings, such as 18 to 19 year olds.
- Women of all ethnic groups complete high school at substantially higher rates than males. Since the mid-1970s there has been a statistically significant increase in completion rates for black females but no change in the rates for black males or Hispanic males and females. However, even rates for black females are substantially lower than rates for white females. [Figure 2 and 3]
- In 1988 the high school completion rates for low income 18 to 24 year olds dependent students were 64.6 percent for whites, 61.3 percent for blacks, and 50.6 percent for Hispanics. This compares to 86.4 percent for middle income whites, 83.5 percent for middle income blacks, and 75.5 percent for middle income Hispanics. [Figure 4] Low income black and Hispanic males complete high school at significantly lower rates than others, with the latter completing at a rate of only 43 percent.

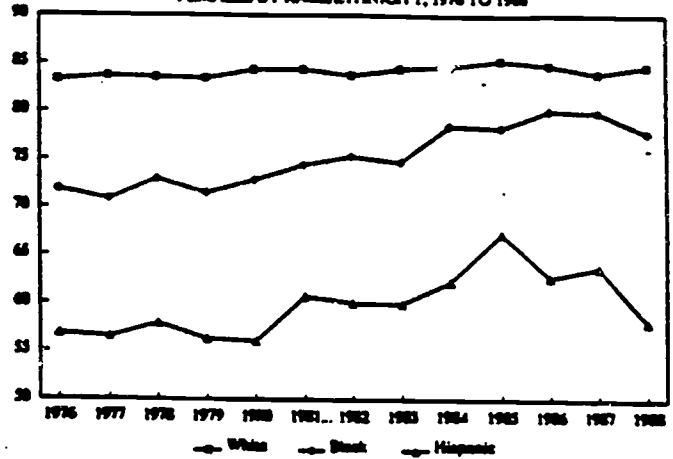
**Figure 1**  
HIGH SCHOOL COMPLETION RATES FOR 18 TO 24  
YEAR OLDS BY RACE/ETHNICITY, 1976 TO 1988



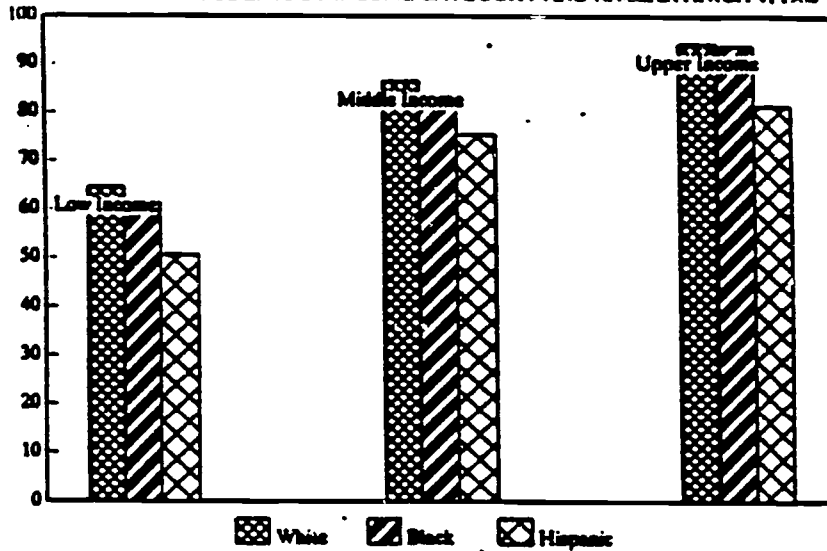
**Figure 2**  
HIGH SCHOOL COMPLETION RATES FOR 18 TO 24 YEAR OLD  
MALES BY RACE/ETHNICITY, 1976 TO 1988



**Figure 3**  
HIGH SCHOOL COMPLETION RATES FOR 18 TO 24 YEAR OLD  
FEMALES BY RACE/ETHNICITY, 1976 TO 1988



**Figure 4**  
HIGH SCHOOL COMPLETION RATES FOR 18 TO 24 YEAR OLD  
DEPENDENT STUDENTS BY INCOME CATEGORY AND RACE/ETHNICITY, 1988



NOTE: Low Income < \$18,581 Middle Income \$18,582 to \$32,119 Upper Income > \$32,120



## College Enrollment

Data on high school graduation would suggest that some subsequent improvements in postsecondary participation should appear. However, data on collegiate participation show that:

- While the overall enrolled-in-college rates for 18 to 24 year old white high school graduates increased from 1976 to 1988, from 33 to 38 percent, rates for blacks declined from 33 to 28 percent, and rates for Hispanics fell from 36 to 31 percent.<sup>2</sup> [Figure 5] Similar trends have been noted for the 19 to 21 year old age cohort.<sup>3</sup>

---

<sup>2</sup> Data from the Department of Education's Integrated Postsecondary Education Data System (IPEDS) survey, recently released by the National Institute of Independent Colleges and Universities, indicates that minority student enrollments increased at both public and private institutions between 1986 and 1988. While these data are encouraging, they do need some qualification and explanation. First, IPEDS shows only what is happening within higher education, as opposed to Census information which shows pipeline effects (for example, Census data show high school graduation and subsequent college enrollment for the same universe). Data that can be used to show transitional effects, as with Census data, are clearly preferable. Second, data on college enrollment are simply not reliable enough to conclusively show changes over a short period of time. Trend analysis, which shows changes over several years or decades, is clearly more reliable. Third, many variables are at work which might skew figures. For example, if Asians are included in the definition of "minority," this might alter the relative increases observed over the time period. For these and other reasons, this paper relies primarily on college participation numbers obtained from Census data.

<sup>3</sup> For data on the 19 to 21 year old age group, see Robert Zemsky, "The Great Sorting: The Inertia of Inequity in American Higher Education," Paper prepared for the College Board Study of Admission to American Colleges and Universities, July 15, 1988.

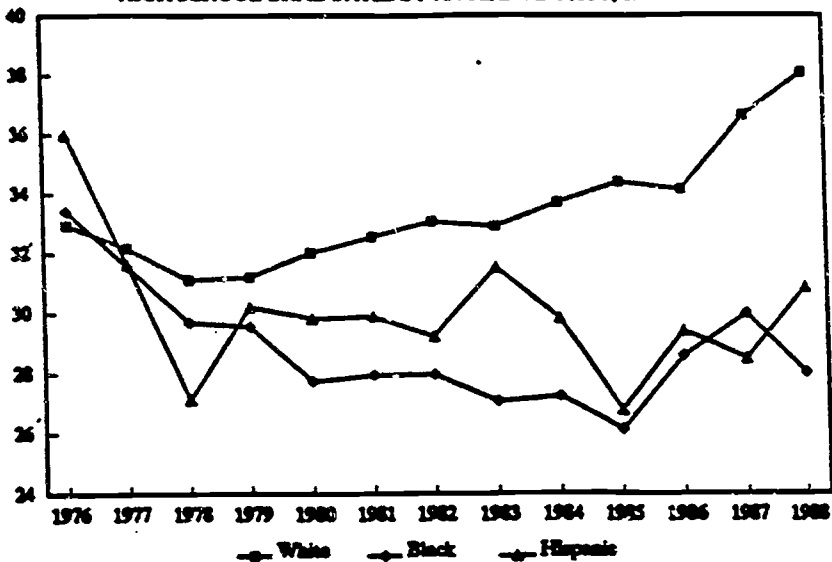
- There appears to be little change in the enrolled-in-college rate for 18 to 24 year old black male high school graduates since 1976.<sup>4</sup> By comparison, the rate for Hispanic males has clearly declined since the middle 1970s. The rate for both black and Hispanic males continues to lag behind the rate for white males by at least 10 percentage points. [Figure 6]
- There is considerable fluctuation in the enrolled-in-college rates for 18 to 24 year old black female high school graduates since 1976, though there appears to be some steady improvement since the middle 1980s. Wide fluctuations in the rates for Hispanic females do not allow for generalizations in this time period. In contrast, white female high school graduates appear to have made solid gains in access in the 1980s, increasing their enrolled-in-college rates from 30 to 37 percent between 1980 and 1988. White female participation rates are higher than black or Hispanic female rates by 5 to 7 percentage points.<sup>5</sup> [Figure 7]
- Participation by 18 to 24 year old black high school graduates from low income families dropped from nearly 40 percent in 1976 to 30 percent in 1988.

---

<sup>4</sup> This rate may in fact be declining. If data reported for 1988 are correct, there was nearly a 7 percentage point overall drop compared to 1987. Data for future years should help to determine if this is an aberration.

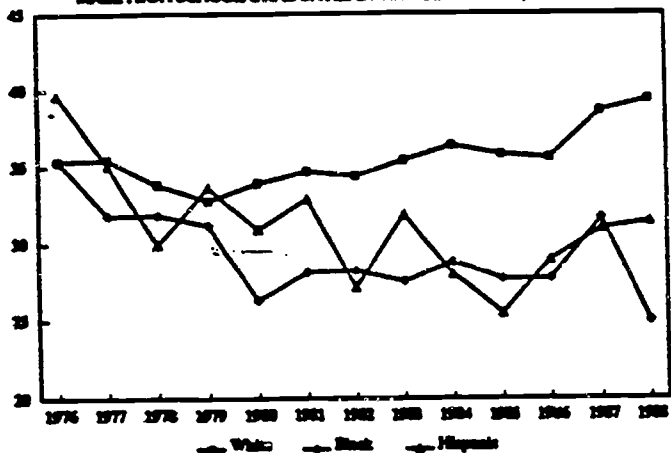
<sup>5</sup> Further data on college entry rates for high school graduates can be found in Robert M. Hauser, "College Entry Among Black High School Graduates: Family Income Does Not Explain the Decline," CDE Working Paper 87-19, Center for Demography and Ecology, University of Wisconsin Madison, 1987.

**Figure 5**  
**ENROLLED-IN-COLLEGE PARTICIPATION RATES FOR 18 TO 24 YEAR OLD HIGH SCHOOL GRADUATES BY RACE/ETHNICITY, 1976 TO 1988**



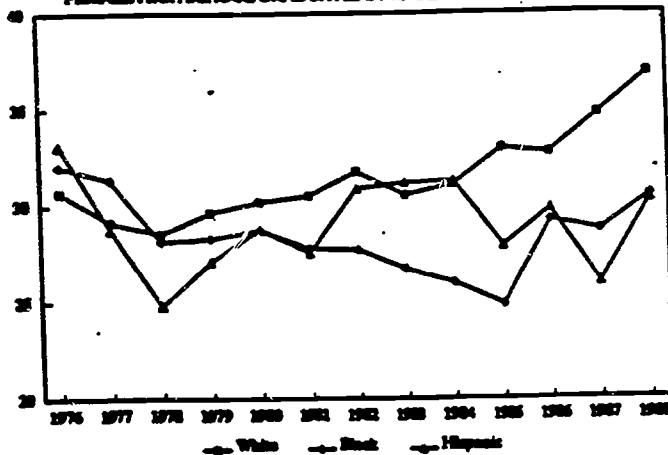
**Figure 6**

**ENROLLED-IN-COLLEGE PARTICIPATION RATES FOR 18 TO 24 YEAR OLD MALE HIGH SCHOOL GRADUATES BY RACE/ETHNICITY, 1976 TO 1988**



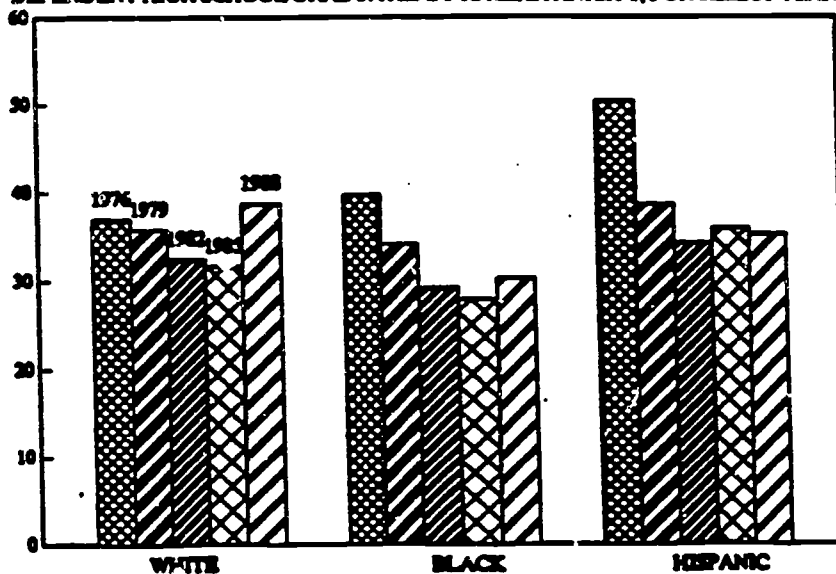
**Figure 7**

**ENROLLED-IN-COLLEGE PARTICIPATION RATES FOR 18 TO 24 YEAR OLD FEMALE HIGH SCHOOL GRADUATES BY RACE/ETHNICITY, 1976 TO 1988**



**Figure 8**

**ENROLLED-IN-COLLEGE PARTICIPATION RATES OF 18 TO 24 YEAR OLD LOW INCOME DEPENDENT HIGH SCHOOL GRADUATES BY RACE/ETHNICITY, FOR SELECT YEARS**



Participation by Hispanics from low income families dropped even more precipitously, from 50 to 35 percent. [Figure 8]

- Minority students continue to be overrepresented in community colleges and other non-baccalaureate programs. For example, the distribution of students enrolled by race and institutional type indicates that while 64.1 percent of white students enrolled in all of postsecondary education attend four year schools, only 57.3 percent of black students and 45.6 percent of Hispanic students are in four year institutions.<sup>6</sup>

### College Completion and Degree Attainment

Access to postsecondary education is by no means a sufficient measure of the educational system's successes. The goal of the system cannot just be entry into college; some measures of persistence must also be examined. Data on retention, completion, and degree attainment show that:

- In 1987 black students accounted for 9.2 percent of the total undergraduate population but received only 5.7 percent of the bachelor's degrees awarded. By

---

<sup>6</sup> James R. Mingle, Focus on Minorities: Trends in Higher Education Participation and Success (Denver, CO: State Higher Education Executive Officers, July, 1987), 5.

comparison, white students accounted for 79.2 percent of the total undergraduate population and yet received 87.5 percent of the bachelor's degrees awarded.

- The number of black students earning bachelor's degrees between 1976 and 1987 fell 4.3 percent overall, and 12.2 percent for black males. However, the number of bachelor's degrees awarded to Hispanic students rose some 50 percent between 1976 and 1987, though most of this increase is due to Hispanic women.
- Of the total number of bachelor's degrees awarded to black students in 1987, at least 30 percent were conferred by historically black institutions. The percentage of degrees conferred to minority students by non-black institutions remained relatively constant throughout the early and middle 1980s.
- By bachelor's degree type, black and Hispanic students are concentrated in business, education, and social science fields. There have been some percentage increases in degrees awarded to black and Hispanic students in engineering and other technical fields, though the actual numbers are quite small. For example, of the 73,840 engineering degrees awarded in 1987, only 2,356 (3.2 percent) were awarded to black students and 2,007 (2.7 percent) to Hispanic students.

## Non-College Alternatives

Given these data showing improvements in high school graduation for minority students but a lack of significant progress in terms of postsecondary participation and subsequent bachelor's degree attainment, it is reasonable to inquire where these students are going. This has been one of the more troublesome explorations for researchers because each of the places where students might logically be found have failed to fully account for the "missing" youth. Consider these research findings:

- According to The Forgotten Half, in 1986 only 45 percent of black high school graduates under age 20 who were not enrolled in college were working full time, and only 49 percent were working at all.<sup>7</sup>
- A recent Congressional Budget Office study found that the military recruited proportionately fewer blacks in 1987 than in 1980. However, larger percentages of middle and upper income blacks were recruited by the military in 1987 compared to 1980. This suggests that black military recruits are now drawn less

---

<sup>7</sup> William T. Grant Foundation Commission on Work, Family, and Citizenship, The Forgotten Half: Non-College Youth in America (Washington, DC: William T. Grant Foundation, January, 1988), 23.

from lower income families.<sup>8</sup>

- Proprietary schools, which were found in a 1980 survey to have enrollments of about one third non-white students, enroll about 1.4 million students annually, according to a 1987 estimate. Given that at least two thirds of proprietary students are age 20 or older (according to the 1980 survey), it would appear that proprietary schools cannot be accounting for a large portion of the "missing" youth.<sup>9</sup>

These data support the notion that there is some number of minority high school graduates who do not participate in the labor force, enroll in the military, or attend any form of postsecondary education. These missing youth are the focus of renewed efforts aimed at providing increased opportunities for educational and social success. As The Forgotten Half points out, "while many youth without a college education are successful,...a large fraction of them are finding it harder to swim against an economic

---

<sup>8</sup> Congressional Budget Office, Social Representation in the U.S. Military (Washington, DC: CBO, October, 1989).

<sup>9</sup> Marci Cox Friedlander, Characteristics of Students Attending Proprietary Schools and Factors Influencing their Institutional Choice (Cincinnati: South-Western Publishing Company, 1980), 33, and John B. Lee, Working Paper: Enrollment in Private Career Schools by State (Denver, CO: Education Commission of the States Task Force on State Policy and Independent Higher Education, July, 1988), 2.

tide that is flowing against them."<sup>10</sup> Postsecondary education, while just one option among many, is an important part of efforts to improve the plight of this "forgotten half" of America's youth.

---

<sup>10</sup> The Forgotten Half, Ibid., 2.



## **II. DISCUSSION: FACTORS ASSOCIATED WITH INADEQUATE PARTICIPATION**

There is general consensus that minority participation in postsecondary education is hampered by many factors. Throughout the educational pipeline, factors directly concerned with, and external to, the educational process play an important role in shaping a student's chances of postsecondary participation. Many of these factors are interrelated, or additive, and therefore cannot be viewed as independent reasons that point conclusively to decreased participation. This section explores these factors at each of three main stages: 1) in the elementary and early secondary grades, and the transition to secondary schools; 2) in the secondary grades, and the critical transition period to college or other forms of postsecondary education; and 3) at the college level, and the transition to completion and degree attainment.

In seeking to define the dimensions of the problem of minority participation, this paper necessarily focuses on the available national evidence that has been compiled and disseminated. Where such information is incomplete or inadequate, studies and reports at the state, local, or institutional level are examined.

## Elementary and Early Secondary Grades

By nearly every objective measure, the school performance of minority students in the elementary and early secondary grades lags behind that of white students, despite gains in recent years. This limited achievement by minority students in these early years is the beginning of a "funnel" effect that results in inadequate levels of participation at the opposite end of the educational pipeline.

Data on student achievement in reading, science, math, and writing indicate that minority elementary and middle school students are uniformly behind their white counterparts. According to the National Assessment of Educational Progress tests of 9 (fourth grade) and 13 (eighth grade) year olds, some progress has been registered since NAEP was first administered in 1971. Nevertheless, the gap between minorities and whites is substantial. For example, using a scale of 0 to 400, the writing test found that 9 year old white students average a 163 while black students average 138 and Hispanic students average 146. The math test found that black and Hispanic 13 year old students average 10 to 15 percentage points lower than white students (on a 0 to 100 scale).<sup>11</sup> These and other indicators of minority achievement at the elementary and early secondary levels are a harbinger of later performance and attainment.

---

<sup>11</sup> U.S. Department of Education, Office of Educational Research and Improvement, Youth Indicators 1988: Trends in the Well-Being of American Youth (Washington, DC: GPO, August, 1988), 60, 62. Data cited here are from the 1984 NAEP tests.

According to the available literature, the factors affecting minority student performance at this level are environmental and educational. The literature suggests that both play an important role in limiting later participation in postsecondary education.

Certainly the most prominent environmental reason identified in the literature is poverty, and in particular its concentration in isolated communities within metropolitan areas. According to the Urban Institute, which defines these isolated communities or "underclass census tracts" as areas which have high concentrations of female headed families, families on welfare, high school dropouts, and chronically unemployed or underemployed men, in 1980 there were some 880 underclass tracts throughout the country. These tracts have a total population of 2.5 million and are 59 percent black, 10 percent Hispanic, and 28 percent white. The number of children under age 19 in these areas is more than 800,000. Compared to the U.S. average, these underclass tracts have three times as many families headed by a single female.<sup>12</sup>

Many leading scholars contend that this concentration of poverty has also been exacerbated by government policies, particularly in the case of housing. According to

---

<sup>12</sup> These figures are cited in Frank Newman, Robert Palaich, and Rona Wilensky, "Reengaging State and Federal Policymakers in the Problems of Urban Education," in Marshall Kaplan and Franklin James, editors, The Future of National Urban Policy (Durham, NC: Duke University Press, 1990), 63-88.

William Julius Wilson's groundbreaking study of poverty in the nation's five largest cities, one housing project in Chicago--which in 1980 accounted for about 0.5 percent of the city's total population--was the site of 11 percent of the city's murders and 10 percent of its aggravated assaults. In this project 93 percent of the families (all of which were black) were headed by single parents and 47 percent of all working age adults were unemployed.<sup>13</sup>

The effect of this concentrated poverty on children can be devastating. Ultimately this can have pernicious effects on the later participation of these students in pursuing educational goals at the postsecondary level. As Wilson points out, children of all ages living in underclass tracts "seldom interact on a sustained basis with people who are employed or with families that have a steady breadwinner. The net effect is that joblessness, as a way of life, takes on a different social meaning; the relationship between schooling and post-school employment takes on a different meaning. The development of cognitive, linguistic, and other educational and job-related skills necessary for the world of work in the mainstream economy is thereby adversely affected. In such neighborhoods, therefore, teachers become frustrated and do not teach and children do not learn. A vicious cycle is perpetuated through the family,

---

<sup>13</sup> William Julius Wilson, The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy (Chicago: University of Chicago Press, 1987), as cited in Newman, et. al., "Reengaging State and Federal Policymakers."

through the community, and through the schools."<sup>14</sup>

The literature also suggests that the early development of at-risk children is influenced by the schools and school systems. Like the problems with poverty and crime, the great majority of the dilemmas for schools and systems are urban in nature. According to most reliable estimates, minority students make up less than one third of the total public elementary and secondary school population but account for more than one half of the population of urban schools. These students are therefore isolated in urban school systems, much as urban minorities in general are isolated in underclass census tracts.

Author and researcher Gary Orfield, whose work on the study of desegregation has spanned three decades, noted in the late 1970s that "school desegregation may be merely a first bridge across the racial gulf, but it is the only bridge we can build in our generation."<sup>15</sup> However, nearly a decade later, Orfield's work with the Metropolitan Opportunity Center at the University of Chicago paints a portrait that is not much different from the one that existed in the early 1970s. According to his analysis of desegregation through the middle 1980s, most states have made no progress with respect to integration; in fact, most evidence suggests that the segregation of Hispanics

---

<sup>14</sup> Ibid.

<sup>15</sup> Gary Orfield, Must We Bus?: Segregated Schools and National Policy (Washington, DC: The Brookings Institution, 1978), 455.

has increased. For example, in 1984 only 18.3 percent of black students in New York, 16.2 percent in Michigan, and 16.0 percent in Illinois attended predominantly white schools. In Texas, where 28 percent of the student population is Hispanic, only 22 percent of Hispanic students attend predominantly white schools. In California, three quarters of all Hispanic students attend schools where less than half the students are white.<sup>16</sup>

It is appropriate to ask what specifically about the isolation of minority students in urban schools and school systems could be contributing to the lack of participation in higher education at the other end of the educational pipeline. Perhaps the most critical factor identified by researchers is academic preparation. The entire school reform movement has proceeded because of perceived levels of inadequate achievement by elementary and secondary students, especially those who are poor or from minority backgrounds. These lower levels of achievement in the early grades are at the heart of later academic troubles for at-risk youth.

Operationally, inadequate academic preparation manifests itself in the form of poor grades or low test scores. For example, Orfield's state level work found that nearly 70 percent of all black and Hispanic third graders in California attend schools

---

<sup>16</sup> Gary Orfield, "School Segregation in the 1980s: Trends in the States and Metropolitan Areas," A Metropolitan Opportunity Project paper (Chicago: University of Chicago, July, 1987).

with test scores below the national norms. Similarly, in ranking the California schools by test scores into quartiles, he found that the lowest quartile schools were two thirds black and Hispanic.<sup>17</sup>

Another factor at the elementary and early secondary educational levels that may contribute to poor postsecondary participation by minority students is ability grouping. According to most analysts, this practice of separating students into academic groups has two effects: it concentrates students, at an early age, into strata of "their own kind," and, for those in lower ability groups, creates a less active, more rote learning type system that may actually contribute to failure.

Not surprisingly, academic grouping has been found to concentrate poor and minority students in the lower ability groups. According to one study, these students are disproportionately represented in the lowest ability groups, while those from more affluent, white backgrounds are disproportionately found in the upper groups.<sup>18</sup> Newman et. al. point out that assignment to a lower ability group "is a life sentence for continued failure since lower-level students are never taught the same material as upper-track students and are subjected to the least effective pedagogical strategies."<sup>19</sup>

---

<sup>17</sup> Ibid.

<sup>18</sup> Jeannie Oakes, Keeping Track (New Haven, CT: Yale University Press, 1985, 152.

<sup>19</sup> Newman, et. al., "Reengaging State and Federal Policymakers," 70.

The so-called "pullout programs" that exist to help special needs students--who are also disproportionately minorities<sup>20</sup>--also may contribute to limiting later educational opportunities. These programs, designed to provide remediation or instruction by a specialist, have been lauded by some researchers as well-intentional efforts to address the needs of disadvantaged students. Unfortunately, most concur that the effect of pulling students out of the normal classroom setting is that instruction in basic subjects such as reading and mathematics are sacrificed for the sake of special needs courses in speech and other areas. This "inequity inflicted in the name of equity" again results in limited opportunities for minority students farther down the educational pipeline.<sup>21</sup>

Other factors have also been identified by researchers as likely contributing to inadequate achievement by minority students. For example, there is currently a dearth of minority teachers in public schools. The Quality Education for Minorities Project reports that while public schools in 1987 were 16.2 percent black and 9.1 percent Hispanic, the teaching force was only 6.9 percent black and 1.9 percent Hispanic.<sup>22</sup>

---

<sup>20</sup> Ibid., 71.

<sup>21</sup> Ibid.

<sup>22</sup> Quality Education for Minorities Project, Education That Works: An Action Plan for the Education of Minorities (Cambridge, MA: Massachusetts Institute of Technology, January, 1990)



The lack of role models and linguistic/cultural diversity in the mostly white teaching force may have important effects on minority students.

The low levels of postsecondary education participation that are rooted in young minority youth educational experiences can also be traced to another factor: the lack of adequate programs and resources designed to introduce students and families in these early years to the benefits of persisting through high school and enrolling in a higher education program. These so-called early information resources and programs are targeted on those students outside the traditional group of college bound students who are considered, because of economic and other factors, to be at considerable risk of dropping out.

The NASFAA/ACE report on early awareness programs, Certainty of Opportunity, notes that early information resources and programs can play a critical role in determining the post-high school plans of at-risk youth. According to the report, information about preparing for college, developing a college-bound curriculum, and financial planning "helps students make prudent choices and provides them with incentives and milestones for achievement."<sup>23</sup> Regrettably, however, this information-- while frequently available to those who know how to look for it--often does not reach

---

<sup>23</sup> National Association of Student Financial Aid Administrators and the American Council on Education, Certainty of Opportunity, A Report on the NASFAA/ACE Symposium on Early Awareness of Postsecondary Education (Washington, DC: NASFAA, 1989), 11.

at-risk minority and disadvantaged youth who would benefit most from its advice.

These students end up with a limited awareness of the possibilities available in the post-high school period and may therefore never achieve economic independence.

Of course, many other factors tied to the elementary and early secondary education of minority youth have been identified in the literature as possibly contributing to the lack of participation and achievement in college. Among those that have been identified are low expectations of minority students on the part of educators, inadequate school financing, poorly prepared teachers, negative peer pressure, and many others.<sup>24</sup> This further supports the notion that the pipeline effects contributing to low levels of involvement and success in postsecondary education are both varied and complex.

### Secondary Grades

Achievement for black and Hispanic students at the secondary level trails behind that for white students. Poor performance by minority students at this level continues the funnel effect that begins in elementary school and culminates in low postsecondary participation.

---

<sup>24</sup> For a discussion of some of these factors see Quality Education for Minorities Project, ibid., 37-44.

Data on performance by minority students in high school indicate that improvements have been made, especially in the last decade. For instance, performance by 17 year old black and Hispanic students on the NAEP reading test have improved remarkably since 1971.<sup>25</sup> And SAT scores rose between 1979 and 1989 by 49 points (21 verbal, 28 math) for black students and 33 points (15 verbal, 18 math) for Hispanic students. White scores rose only 10 points in this time period.<sup>26</sup>

Nevertheless, significant gaps between minority and white students remain. Seventeen year old black and Hispanic students still read only as well as white 13 year olds, according to NAEP. Math achievement by minorities on NAEP is also far below that for whites.<sup>27</sup> And SAT scores for blacks and Hispanics still lag behind those for whites (200 points in the case of black students), despite improvements over the previous decade.<sup>28</sup>

---

<sup>25</sup> Mingle, ibid., 5.

<sup>26</sup> Quality Education for Minorities Project, ibid., 19.

<sup>27</sup> Youth Indicators 1988, ibid.

<sup>28</sup> Quality Education for Minorities Project, ibid., 19. Of course there has been considerable controversy over possible cultural biases in the SAT and other standardized tests. While the issue of test bias is beyond the scope of this paper, scores can at least be used to indicate some general failure of the educational system. For example, disparities on SAT scores could, at a minimum, indicate differences in the test taking abilities of minority students versus white students.

The effects of poor performance can also be measured in other ways. For example, according to an Urban Institute study, of people ages 16 to 19, 36 percent of those in underclass census tracts are not enrolled in high school and are not high school graduates. This compares to 13 percent for the nation on the whole.<sup>29</sup> Similarly, a study of Chicago public schools found that while whites drop out at a rate of 35 percent, black dropout rates were 45 percent and Hispanic dropout rates 47 percent.<sup>30</sup>

The literature points out that many of the problems minority students face at the early levels continue to fester and grow in the high school years. These environmental and educational factors further contribute to the insufficient levels of minority participation in postsecondary education.

The social and economic factors noted as contributing to failure at the elementary and early secondary levels are magnified at the high school level. Poverty, crime, and the many other intervening social factors associated with urban existence intensify as a student gets closer to the crossroads that will determine his or her post-high school plans. Which road a student will take is often determined by a combination of these environmental variables. The forks in this road have been identified as: dropping out; successfully completing the basic program of study and entering the

---

<sup>29</sup> Newman, et. al., "Reengaging State and Federal Policymakers, 64.

<sup>30</sup> *The Chicago Panel on Public School Policy and Finance, Dropouts from the Chicago Public Schools (Chicago: CPPSPF, 1987).*

workforce or military; and successfully completing a college-oriented program of study and normally persisting through to postsecondary education.

Much like at the elementary and early secondary school levels, several educational factors have been suggested as contributing to the problem of inadequate postsecondary participation by minority students. Among these factors, tracking is described by many researchers as important in limiting further opportunities for minority students. Students placed in lower tracks typically come from the same groups of lower ability students developed in the elementary grades. Like those in the lower ability groups, those in lower tracks at the high school level tend to be poor and from minority groups.<sup>31</sup> For example, Mingle reports that while two thirds of all white students are enrolled in college preparatory courses, only one half of all black students and just over one third of all Hispanic students are on this track.<sup>32</sup> Tracking is therefore the culmination of a process begun several years earlier that tends to limit the future, postsecondary opportunities of many minority students.

Another educational factor affecting minority participation at the postsecondary level might be characterized as curricular choices made by schools and students. According to the Chicago Study of Access and Choice in Higher Education, a two-

---

<sup>31</sup> Oakes, Keeping Track.

<sup>32</sup> Mingle, Ibid., 5.

tiered system of education exists: the upper tier trains students with mathematics, science, and foreign language curricula that are well suited to collegiate requirements, while the lower tier fails to adequately educate students and therefore offers "almost no chance to seriously prepare for competitive higher education."<sup>33</sup> These lower tier schools fall almost exclusively in the predominantly black areas on Chicago's South Side. Of course, Chicago is probably not unique among American cities.

Likewise, the textbooks, diagnostic tests, and other materials used by schools to teach and evaluate students have been criticized for penalizing students who somehow differ from the majority.<sup>34</sup> If the teaching and evaluation materials used by the secondary schools contain biases against minority students, then it is reasonable to suggest that they also might have negative effects on the later plans of these students, either by validating prejudices or limiting opportunities to progress.

The practice of many schools of using grade retention or school suspension as methods of classroom discipline and advancement also likely has an effect on the later plans of minority and disadvantaged students. According to one study, minority school populations have retention rates at least three times as high as majority school

---

<sup>33</sup> Gary Orfield, Howard Mitzel, and others, The Chicago Study of Access and Choice in Higher Education, A Report to the Illinois Senate Committee on Higher Education (Chicago: University of Chicago, 1984), 119.

<sup>34</sup> For example, see the Certainty of Opportunity report's discussion of the structures and practices of the education system that inhibit and obscure the talents and abilities of minority students.

populations. Yet according to this study, holding students back a year has serious negative effects, including low self esteem and motivation and a lack of interest in extracurricular activities.<sup>35</sup> Other studies have found that grade retention is a strong predictor of dropping out.<sup>36</sup>

Other factors have been identified in the literature as contributing to the poor levels of minority participation in higher education. These include class size (or teacher/student ratios) and the limited number of culturally sensitive teachers available to teach minority students.<sup>37</sup> Classrooms that do not respond to those students with individual needs, and which do not offer role models for minority youth, play an important--if difficult to measure--role in deciding post-high school plans and aspirations.

The information that students receive at the secondary level about post-high school planning, especially information which relates to normal persistence through to college, has also been related to minority participation in higher education. Information and direction that students receive about success in school and proceeding to

---

<sup>35</sup> Carol Ascher, Trends and Issues in Urban and Minority Education, 1987, Paper prepared for the ERIC Clearinghouse on Urban Education, Teachers College, Columbia University.

<sup>36</sup> See, for example, The Chicago Panel on Public School Policy and Finance, Dropouts from the Chicago Public Schools (Chicago: CPPSPF, 1987).

<sup>37</sup> See, for example, Orfield, Mitzel, et. al, The Chicago Study, 125-127, or National Association of College Admissions Counselors, "From High School to College - A Critical Transition," A Paper prepared by the National Association of College Admissions Counselors, 1983.

postsecondary education--usually emanating from guidance or career counselors--can play a critical role in the school to college transition. According to the Certainty of Opportunity report, counselors are spread far too thinly because of high counselor to student ratios and because of onerous paperwork requirements. They also are required to fulfill other duties, such as tracking truants and developing substance abuse programs, which detract from direct counseling and information efforts. As a result, counselors and other school personnel may actually hinder effective information and guidance for disadvantaged students. As the report notes, "the first suggestion that [minority and other disadvantaged] students get to drop out may even come from school personnel, who tell them that they are not teachable."<sup>38</sup>

The literature certainly identifies many other factors at the high school level which contribute to inadequate levels of postsecondary participation by minorities. The depth and breadth of factors that have been cited in the literature contribute to the belief that the problem is complex and varied.

### College Level

The problem of minority participation, retention, and completion is clear: while college enrollment rates for high school graduates have increased for white students

---

<sup>38</sup> Certainty of Opportunity, p. 4.



since the middle 1970s, they have declined for both black and Hispanic students. This effect appears to be pronounced for low income students. College participation by black high school graduates from low income families dropped from nearly 40 percent in 1976 to 30 percent in 1988. College participation by Hispanic high school graduates from low income families fell even more precipitously, from 50 percent to 35 percent.<sup>39</sup> At the same time, minorities continue to earn a significantly smaller share of degrees conferred relative to total undergraduate enrollment. The number of black students earning bachelor's degrees between 1976 and 1987 fell 4.3 percent overall, and 12.2 percent for black males.<sup>40</sup> Such data have helped to fuel discussions about persistent problems with minority college student retention and completion.<sup>41</sup>

The question that must be asked is: what reasons might be cited as contributing to this limited achievement? Regrettably, the causes of abnormal persistence on the part of minority college students is one of the lesser understood phenomena in higher

---

<sup>39</sup> Deborah J. Carter and Reginald Wilson, "Eighth Annual Status Report: Minorities in Higher Education," American Council on Education Office of Minority Concerns, December, 1989, 5. These figures are for 18 to 24 year olds. Also, caution is urged in interpreting data on Hispanic participation because of possible sampling error in the Census surveys.

<sup>40</sup> Ibid., 10.

<sup>41</sup> See, for example, discussion in One-Third of A Nation, Ibid.

education research. Still, the data which have been collected and analyzed suggest that several factors related to postsecondary education institutions help to explain the poor rates of retention and completion by minority students.

Studies of the departure of minority students from higher education institutions usually contend that academic difficulties are largely to blame. For example, Astin's research showing that the best correlate of minority student retention is high school grades has been continually validated over time.<sup>42</sup> Academic preparation at the pre-high school levels, previously shown to be a major factor in limiting minority student access to higher education, also contributes to the higher rates of departure for these students once they have gained access. This is because the inadequate preparation at the earlier levels leaves many students unprepared for the rigors of collegiate life. As a consequence, these students drop out or transfer to less challenging institutions.<sup>43</sup>

However, academic skills, as measured by grades, test scores, or other measures, are not the only reasons to explain low minority student retention and completion. In fact, according to Tinto and other researchers, the integration of minority students into

---

<sup>42</sup> Alexander W. Astin, Preventing Students from Dropping Out (San Francisco: Jossey-Bass, 1975).

<sup>43</sup> R. Donovan, "Path Analysis of a Theoretical Model of Persistence in Higher Education Among Low-Income Black Youth," Research in Higher Education, Vol. 21 (1984), 243-252.

the mainstream of a majority white school's social and intellectual life can be a critical factor in determining departure.<sup>44</sup> This integration can take several forms.

One form of integration relates to the self learning process. According to Tracey and Sedlacek, persistence by disadvantaged black students is related not only to academic skills, but also to a familiarity with the academic requirements of the school, a realistic assessment of one's skills, and what is called "positive academic self concept."<sup>45</sup> Thus, possessing academic skills is necessary but not sufficient for minority students to successfully complete their college degree.

What might be termed intellectual integration is also an important indicator of retention and completion for minority college students. This is somewhat different from academic involvement because it concerns the institution's intellectual involvement with the student. Positive faculty contact in general, and minority faculty mentors or role models in particular, have been found to play an important part in minority student persistence.<sup>46</sup> Interestingly, integration by black students has been found to be more influenced by formal structures (such as serving on a departmental committee) than for

---

<sup>44</sup> Vincent Tinto, Leaving College (Chicago: The University of Chicago Press, 1987).

<sup>45</sup> T. Tracey and W. Sedlacek, "The Relationship of Noncognitive Variables to Academic Success: A Longitudinal Comparison by Race," Journal of College Student Personnel, Vol. 26 (1985), 405-410.

<sup>46</sup> W. Allen, "Black Student, White Campus: Structural, Interpersonal, and Psychological Correlates of Success," Journal of Negro Education, Vol. 54 (1985), 134-47.

white students.<sup>47</sup> This suggests that some desire to participate in the more "serious" aspects of the higher education experience is found in minority students who persist.

Another form of integration is social. The campus environment can be hostile to minority groups, and therefore supportive communities within the college can be an important factor in determining retention and completion. According to Tinto, the important social questions include having a sufficient number of persons of like origins on campus from which viable communities can be developed, and having a range of supportive communities for minority students to pick and choose.<sup>48</sup> Therefore, it is not enough to have an African American Heritage Club (or some other entity) as the sole social outlet for minority students at a mainly white institution, since sharing a common racial origin is not a guarantee of shared interests or values. With the exception of a few large campuses, the limited number of such outlets for minority students tend to make them feel isolated or incongruous in the community in general, and therefore find less motivation for completing.

---

<sup>47</sup> This is based on a study of persistence among black and white students at 350 four year colleges and universities. See E.T. Pascarella, "Racial Differences in Factors Associated with Bachelor's Degree Completion: A Nine Year Follow-Up," Research in Higher Education, Vol. 23 (1985), 351-373.

<sup>48</sup> Tinto, Leaving College, 70-72.

Many other factors have been identified in the literature as contributing to low levels of retention and completion for minority students. Among them are inadequate counseling and support services, lack of financial resources, and a host of other factors. However, it should also not be forgotten that even graduation from college leaves minorities at a disadvantage compared to whites. According to Harrison and Gorham, of blacks who had completed four or more years of college in 1987, 42 percent earned wages under the poverty line. This compares to 26 percent for whites.<sup>49</sup> These data further support the notion that problems associated with minority student participation and achievement in college are extremely complex and cannot be easily described or remedied.

---

<sup>49</sup> Bennett Harrison and Lucy Gorham, "What Happened to Black Wages in the 1980s? Family Earnings, Individual Earnings, and the Growth of the African-American Middle Class," Working Paper 90-1, Carnegie Mellon School of Urban and Public Affairs, January, 1990, 10.

### III. CONCLUSION: SUMMARY AND IMPLICATIONS

The problem of minority student participation is a vexing one, not only for higher education but also for society in general. The losses to society in the form of higher unemployment and welfare costs, a less productive workforce, and, in some cases, the costs of incarceration, are all directly attributable to both social and educational failures. These losses have disastrous societal consequences for the nation on the whole and its position in the global community.

In order to understand the problems associated with access to, and completion of, higher education, one must examine the literature's review of the many environmental influences that affect youth throughout their educational lives. Factors such as poverty and crime play a critical role in determining the later work or educational plans of youth. These factors begin to affect disadvantaged minorities at an early age, and have additive effects as time progresses.

However, for our purposes, we have sought to determine what the literature concludes about those factors that likely have a significant effect on limiting minority participation in higher education throughout the educational pipeline. These variables relate both to the concentration of poor and minority youngsters in certain schools in

elementary and secondary school, and to specific school practices and influences throughout the educational system (including the postsecondary level) that tend to further isolate minority students.

In the elementary and early secondary grades, where the majority of effects seem to occur, inadequate academic preparation, as seen through low grades or poor test scores, is apparently important in determining the later educational direction of at-risk minority youth. Ability grouping, which tends to concentrate poor and minority students in lower ability groups, has also been identified as a negative factor. Likewise, pullout programs designed to provide remediation and instruction for special needs students (a high percentage of whom are minority) also have negative consequences: they pull students away from instruction in basic subjects for the sake of special needs course, thus inhibiting later academic progress.

A dearth of minority teachers may also be a part of the equation leading to low levels of postsecondary involvement by minorities. Further, a lack of early awareness about college and the availability of financial aid has also been postulated to be a factor which limits later participation by minority students in higher education. Many other factors have also been identified in the literature.

At the secondary level, several factors have been identified as contributing to inadequate collegiate participation by minority students. Tracking, like ability grouping at the earlier levels, has been found to limit the chances of minority students in successfully proceeding to higher education. Curricula, especially at "lower tier" high schools located primarily in underclass census tracts, may also effectively shut disadvantaged minority students out of higher education. Similarly, the textbooks, diagnostic tests, and other materials incorporated into these curricula also have an effect on collegiate participation because of cultural and social biases.

The practice of many schools of using grade retention or school suspension as methods of classroom discipline and advancement also likely have an effect on the later plans of minority and disadvantaged students, according to the literature. Further, the research indicates that the inadequate amount and timing of information that minority students receive about college from guidance counselors also is a contributory factor, largely because of high counselor to student ratios and the amount of time spent by guidance professionals on non-counseling functions. Other important factors identified in the literature include high teacher to student ratios, the limited number of minority role models for students in the schools, and many others.

At the college level, several factors related to poor levels of completion and degree attainment by minority students have been identified. These include poor



academic preparation (primarily because of failures in the pre-college years) and the failure to integrate minority students into the mainstream of a college's social and intellectual culture. Poor integration into both the intellectual framework of an institution--either because of negative faculty contacts or a lack of mentors--and the social fabric beyond basic peer contact also are important in influencing retention and completion, according to the most recent thinking on this subject. There are also certainly many other factors to which the literature points as contributing to unacceptable retention and completion rates.

The picture painted by the literature of the reasons why minority students fail to adequately participate in higher education is complex. This complexity is an important aspect that helps to both describe the problem and guide the remedies that might be proposed. However, it is not unreasonable to note that a combination of social and educational factors are at work. Both suggest that isolation and segregation of minority youngsters, whether it be in communities, inner city schools, academic ability groups, or simply predominantly white colleges and universities, has pernicious effects on successful minority participation in higher education. And both point to the fact that the earlier this isolation or segregation occurs, the more negative effects it appears to have on the postsecondary planning of minority youth. The challenge to the educational system, and to society in general, is to find ways eliminate barriers while improving the academic and social conditions for all students.

This paper, then, has served as an introduction to understanding the problems associated with minority participation in postsecondary education. The next step in the Advisory Committee's work in this area is to examine the level and quality of information programs and resources as a part of broader intervention strategies geared toward at-risk youth. An exploration of both the traditional forms of counseling and support programs for students and their families, and more recent, specialized information programs, is an important part of the Committee's efforts to appraise the adequacies and deficiencies of current resources and services.

## APPENDIX

- Table 1: High School Completion Rates for 18 to 24 Year Olds By Race/Ethnicity, 1976 to 1988
- Table 2: High School Completion Rates for 18 to 19 Year Olds By Race/Ethnicity, 1976 to 1986
- Table 3: High School Completion Rates for 18 to 24 Year Olds By Race/Ethnicity and Sex, 1976 to 1988
- Table 4: Enrolled-in-College Participation Rates for 18 to 24 Year Old High School Graduates By Race/Ethnicity, 1976 to 1988
- Table 5: Enrolled-in-College Participation Rates for 18 to 24 Year Old High School Graduates By Race/Ethnicity and Sex, 1976 to 1988

Table 1

High School Completion Rates for 18 to 24  
Year Olds By Race/Ethnicity, 1976 to 1988

	ALL	WHITE	BLACK	HISPANIC
1976	80.5	82.4	67.5	55.6
1977	80.5	82.3	67.5	54.7
1978	80.7	82.6	67.8	55.9
1979	80.1	82.1	67.1	55.2
1980	80.8	82.5	69.8	53.7
1981	80.6	82.2	70.9	55.8
1982	80.7	82.4	70.8	57.7
1983	80.4	82.2	70.9	54.8
1984	81.6	83.0	74.7	60.0
1985	82.4	83.6	75.6	62.8
1986	82.1	83.1	76.4	59.9
1987	81.4	82.3	76.0	61.2
1988	81.2	82.3	75.1	55.2

Table 2

High School Completion Rates for 18 to 19  
Year Olds By Race/Ethnicity, 1976 to 1986

	ALL	WHITE	BLACK	HISPANIC
1976	73.1	75.4	58.2	50.9
1977	72.9	75.7	54.9	50.7
1978	73.5	76.3	54.9	48.9
1979	72.8	75.3	56.4	53.7
1980	73.7	76.1	59.3	46.1
1981	72.5	74.8	59.6	47.2
1982	72.0	74.5	58.2	51.7
1983	72.7	75.6	59.1	50.3
1984	73.3	75.5	63.0	58.3
1985	74.6	76.7	62.8	49.8
1986	74.6	76.6	64.9	54.7

NOTE: Data on 18 to 19 year olds for 1987  
and 1988 are not currently available  
from published sources.

Table 3

High School Completion Rates for 18 to 24 Year  
Olds By Race/Ethnicity and Sex, 1976 to 1988

	MEN			
	ALL	WHITE	BLACK	HISPANIC
1976	79.2	81.4	62.3	53.9
1977	79.0	80.9	63.5	52.5
1978	79.3	81.6	61.5	53.8
1979	78.5	80.7	61.7	54.2
1980	78.9	80.6	65.9	51.2
1981	78.2	79.9	66.7	50.4
1982	79.0	80.9	65.6	55.0
1983	77.9	79.8	66.5	49.2
1984	79.4	81.1	70.2	57.4
1985	80.4	81.7	72.3	58.2
1986	80.0	81.2	72.1	57.7
1987	79.4	80.6	71.3	59.5
1988	78.7	79.7	71.9	52.7

	WOMEN			
	ALL	WHITE	BLACK	HISPANIC
1976	81.7	83.3	71.8	56.8
1977	82.0	83.7	70.8	56.5
1978	82.0	83.5	73.0	57.9
1979	81.7	83.4	71.5	56.3
1980	82.7	84.4	72.9	56.0
1981	82.8	84.4	74.5	60.7
1982	82.4	83.8	75.4	60.0
1983	82.9	84.5	74.8	60.0
1984	83.7	84.8	78.6	62.3
1985	84.3	85.4	78.4	67.3
1986	84.1	84.9	80.2	62.7
1987	83.2	84.0	80.0	63.8
1988	83.6	84.8	77.9	58.1

Table 4

Enrolled-in-College Participation Rates for 18 to 24 Year Old  
High School Graduates By Race/Ethnicity, 1976 to 1988

	ALL	WHITE	BLACK	HISPANIC
1976	33.1	33.0	33.4	36.0
1977	32.5	32.2	31.6	31.6
1978	31.4	31.1	29.7	27.1
1979	31.2	31.2	29.5	30.2
1980	31.8	32.0	27.7	29.8
1981	32.4	32.5	27.9	29.9
1982	33.0	33.1	28.0	29.2
1983	32.5	32.9	27.1	31.5
1984	33.2	33.7	27.2	29.8
1985	33.7	34.4	26.1	26.8
1986	34.0	34.1	28.6	29.4
1987	36.4	36.6	30.0	28.5
1988	37.3	38.1	28.0	30.9

Table 5

Enrolled-in-College Participation Rates for 18 to 24 Year Old High School Graduates By Race/Ethnicity and Sex, 1976 to 1988

	MEN			
	ALL	WHITE	BLACK	HISPANIC
1976	35.6	35.4	35.4	39.7
1977	35.6	35.5	31.9	35.1
1978	34.1	33.9	31.9	30.0
1979	32.9	32.8	31.2	33.7
1980	33.5	34.0	26.4	31.0
1981	34.7	34.7	28.2	32.9
1982	34.5	34.4	28.3	27.2
1983	35.0	35.4	27.5	31.9
1984	36.0	36.4	28.9	28.1
1985	35.3	35.8	27.7	25.5
1986	35.3	35.7	27.8	29.0
1987	38.6	38.7	31.7	31.1
1988	38.3	39.4	25.0	31.5

	WOMEN			
	ALL	WHITE	BLACK	HISPANIC
1976	30.9	30.7	32.0	33.1
1977	29.7	29.1	31.4	28.8
1978	28.8	28.6	28.2	24.8
1979	29.6	29.7	28.3	27.1
1980	30.3	30.2	28.8	28.8
1981	30.4	30.5	27.8	27.6
1982	31.6	31.8	27.7	30.9
1983	30.3	30.6	26.7	31.2
1984	30.6	31.1	26.0	31.3
1985	32.3	33.0	24.9	27.9
1986	32.8	32.7	29.3	29.9
1987	34.5	34.7	28.7	26.0
1988	36.3	36.9	30.5	30.3