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THE IMPACT OF REDUCTIONS IN FEDERAL STUDENT AID UPON THE  
PARENTAL INCOME AND ACADEMIC CHARACTERISTICS OF MINORITY  
AND NONMINORITY MEDICAL SCHOOL MATRICULANTS

By

Stephen J. Prag

B.A., Coventry Polytechnic, 1981

Presented in partial fulfilment of the requirements

for the degree of

Master of Public Administration

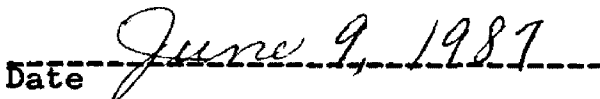
University of Montana

1987

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## INTRODUCTION

In 1970 the American Association of Medical Colleges (AAMC) made a firm commitment to achieve a representative student body, defining "representative" as consisting of 16 percent underrepresented minorities, 12 percent of whom would be black. The AAMC Task Force, in establishing this goal, clearly articulated its rationale for minority education:

The long term goal is to achieve equality of opportunity by reducing or eliminating inequitable barriers and constraints to access to this profession which have resulted in a representation of racial minorities in the medical profession much less than their representation in the U.S. population.

This commitment, coupled with the genuine efforts of the AAMC Task Force to encourage the development of affirmative action programs, was framed within a political climate clearly favorable to the introduction of programs to equalize access opportunities for minorities within the nation's work force. The supports necessary to realize the AAMC's commitment were consequently put in place with relative ease. Examples at the federal level included the creation of the Office of Health Resources Opportunity, which was charged with improving access for the disadvantaged to health careers, and the

establishment of the Health Professions and National Health Service Corps scholarship programs.

Aside from the advantageous political climate the great strides made towards realizing the AAMC's goal during the early 1970's were also a result of the clear compatibility between affirmative action and federal health manpower goals. The goals of the latter, spelled out during the authorization of student assistance programs, included (1) improvement of the quality of health professions students (2) inducement of health professions students to practice in geographic areas where shortages of their skills exist, and (3) increasing the proportion of health professions students from low income families.<sup>2</sup> The National Health Service Corps Scholarship Program, which was designed to increase manpower in the shortage areas, is a primary example of this goal compatibility. In tying substantial financial assistance to service in these underserved areas, NHSC functioned not only as a key element in the federal government's health manpower distribution policy but also, in its clear attraction to students from economically disadvantaged backgrounds, as a bulwark for the goals of affirmative action. This is exemplified by the extensive participation of minority students within the program, peaking at 23.6 percent in 1979.<sup>3</sup>

In the mid 1970's, however, the mood of both the Administration and Congress began to change. With the advent of substantially higher medical school enrollments the need to increase the aggregate supply

of physicians was no longer perceived as a major problem. As such the rationale for federally subsidized student assistance became increasingly questioned. This was exemplified by the remarks of then HEW Secretary Caspar Weinberger who, during congressional hearings, called for the reduction of unnecessary federal subsidies for health professions schools and students because the Administration felt that students would enter training anyway "...under current conditions."<sup>4</sup> In this climate, then, federal student assistance has undergone a major transformation, characterized by a trend away from grants and scholarships towards federally guaranteed loans through the Health Education Assistance Loan Program (HEAL). A major premise of this project is that these changes have imposed a disproportionately heavy burden upon students from economically disadvantaged backgrounds, and have thus been a major source of discouragement to those minority students seeking a medical education.

The evidence clearly shows that the goals set by the AAMC for minority recruitment demonstrated the greatest prospect of realization at the very time that financial support for the goals of affirmative action was at its highest level. Between 1968 and 1974 significant increases in scholarship funding for minority students were matched by correspondingly impressive increases in minority enrollment, which reached a 1974 peak of 10 percent.<sup>5</sup> With the phasing out of federal scholarship support, however, these initial advances are gradually being reversed. Black enrollment, for example, has dropped from a

7.5 percent high in 1974 to 6.8 percent in 1984.<sup>6</sup> While financial aid considerations do not alone explain this reversal, they would seem to constitute a crucial element in what Shea and Fullilove term an overall "...slackened commitment to the goals of affirmative action."<sup>7</sup> To date, however, no studies have been conducted to determine the actual extent and nature of the impact that these changes have exerted on minority students. This paper will attempt to partially fill that void.

This project, then, utilizing AAMC data for the years 1978, 1981 and 1985, addresses the issue of the impact of changes in the nature and funding levels of federal student assistance programs upon the academic and parental income characteristics of minority and nonminority medical school matriculants. In other words, have the characteristics of those students enrolled changed in correspondence with changes in the nature and extent of federal support? Does the reduction in the number of scholarships available, for example, discriminate particularly against students, minority or otherwise, from a lower income background? While this study emphasizes the issue of minority students in medical education, it is also designed to have a general application for all students from disadvantaged backgrounds, regardless of race.

A further, secondary concern of this project is to assess the impact of changes in federal student assistance upon the attrition rate of minority medical students. For example, has the reduction in

the number of scholarships available hampered the ability of gifted minority students from low-income backgrounds to complete their education? Investigation of this question is limited by the availability of data for the years of 1978 and 1981 only.

This is a retrospective study in which a combined total of 48,283 medical school enrollees during the years 1978, 1981 and 1985 (43,958 nonminority and 4,325 minority) are analyzed in order to examine changes in their financial and academic background. Because the data represents the entire population of interest, rather than a sample, no inferential statistics are performed. Therefore, the nature of the study is primarily descriptive. Results are illustrated through the use of graphic representations and contingency tables.

#### NOTES

<sup>1</sup>Association of American Medical Colleges Task Force, Report to the Inter-Association Committee on Expanding Educational Opportunities in Medicine for Blacks and Other Minority Students, quoted in Charles E. Odegaard, Minorities in Medicine (New York: The Josiah Macy Jr. Foundation, 1977), p. 44.

<sup>2</sup>U.S. Congress, House, Committee on Interstate and Foreign Commerce, Current Health Manpower Issues, 96th Cong., 1st sess., p. 30.

<sup>3</sup>U.S. Department of Health and Human Services, Characteristics of Students in the National Health Service Corps, 1973 through 1980, Pubn. No. (HSA) 81-6034, p. 4.

<sup>4</sup>U.S., Congress, House, Committee on Interstate and Foreign Commerce, Health Manpower and Nurse Training, Hearings Before the Subcommittee on Public Health and the Environment of the Committee on Interstate and Foreign Commerce, 93rd Cong., 2nd sess., 1974, p. 318.

<sup>5</sup>Steven Shea and Mindy Thompson Fullilove, "Entry of Black and Minority Medical Students into U.S. Medical Schools," New England Journal of Medicine 313 (October 10, 1985): 939.

<sup>6</sup>Ibid., p. 938.

<sup>7</sup>Ibid.

## CHAPTER I

### DEVELOPMENT AND SALIENCE OF FEDERAL STUDENT FINANCIAL ASSISTANCE IN MEDICAL EDUCATION

#### Development of Federal Student Financial Assistance, 1963-1976

Since the establishment of federal student financial assistance programs for medical education in 1963, the nature and status of these programs has fluctuated considerably. Such fluctuations have occurred primarily in response to changes in federal health manpower goals, but also as a result of economic recession and tight budgetary constraints.

In the wake of World War II the role of federal involvement in health manpower programs had been limited largely to support, mostly through the expanding National Institute of Health, for extensive biomedical research. This research emphasis was reflected in a rise, from 11 percent to 40 percent, in the portion of medical school income directly related to research between the early 1940's and early 1960's.<sup>1</sup> While research blossomed, however, there was a prevailing

sense in Congress that maximization of the benefits of this research was being hampered by a critical national shortage of health professionals.<sup>2</sup> It was thus as part of this effort to alleviate this shortage, and to improve the accessibility and quality of overall medical care, that Congress authorized financial assistance to medical students in the form of the 1963 Health Professions Educational Assistance Act. The purpose of the legislation was summed up by the House Committee report, which stated that the Act:

. . . proposed a three-year program designed to alleviate critical shortages of health professions personnel which already have begun to affect the level of quality of health care in this Nation. Those shortages threaten to become worse during the next decade unless immediate steps are taken to increase the supply of professional health personnel.<sup>3</sup>

The Health Professions Educational Assistance Act marked the beginning of a cascade of legislation throughout the 1960's and early 1970's designed to facilitate and encourage the entry of students from low-income backgrounds into all branches of medical education. Specifically the act provided for health professions loans for financially needy students in medicine and osteopathy. Ensuing legislation in 1964,<sup>4</sup> 1965<sup>5</sup> and 1966<sup>6</sup> extended the loan program to include students of optometry, pharmacy, podiatry and veterinary medicine. The 1965 legislation further authorized a loan forgiveness program for those students who agreed to practice in health manpower shortage areas as designated by the Department of Health, Education and Welfare. This legislation, which was to be given a more concrete form with the establishment of the National Health Service Corps



(NHSC) in 1970, was to be a key bulwark for the goal of increasing the accessibility of medical education to students from financially needy backgrounds. With a disproportionate number of minority students falling into that category this measure also provided crucial support for the goals of affirmative action. A further indication of congressional commitment in this area was the Comprehensive Health Manpower Training Act of 1971 which included a measure extending the loan forgiveness program to students who did not complete their studies and who could not be expected to return to school within two years of ending such studies.

Besides these provisions for an extensive student loan program Congress also authorized a number of scholarship programs in the sphere of medical education. In 1965 Congress passed the Health Manpower Act, which authorized a scholarship program for low-income students of medicine, osteopathy, dentistry, optometry, podiatry and pharmacy who would otherwise be prevented from pursuing a medical education. In 1971 an additional program, the Physician Shortage Area Scholarship Program, was authorized for students who, upon completion of their professional training, agreed to serve in a physician shortage area or in areas in which a large portion of their practice would be made up of migratory agricultural laborers or their families. Finally, in 1972 legislation was enacted authorizing the Public Health and National Health Service Corps Scholarship Program which provided extensive financial assistance to students agreeing to serve a minimum

of one year in the NHSC following their training. The NHSC, which was established by the Emergency Health Personnel Act of 1970, had been charged with the task both of identifying areas in which severe health manpower shortages existed and providing personnel to serve in these shortage areas. In 1972, the NHSC's first year of operation, the corps consisted of 182 volunteer physicians serving in 94 designated manpower shortage areas.<sup>7</sup>

Key Federal Student Financial Assistance Programs:  
Details and Recent Trends

Since 1970 a handful of federal loan and scholarship programs have provided the mainstay of support for medical students from lower income backgrounds. Most obvious has been the Guaranteed Student Loan program (GSL), authorized by the Higher Education Act of 1965 for which medical students remain eligible in spite of recent administration proposals that they be removed from the eligibility rolls.<sup>8</sup> The GSL program marked the continuation of the policy of expanding educational opportunity that began with the creation of the National Defense Student Loan program in 1958. Upon submitting the Act to Congress, President Lyndon Johnson clearly articulated this policy when, in citing the crucial role of education in building national strength, he proposed ". . . to declare a national goal of full educational opportunity."<sup>9</sup> Providing loans of up to \$7,500 annually at 7 to 9 percent interest, with repayment spread over ten years and not due until two years following graduation, GSL's provide

a most attractive means of partially financing a medical education. The importance of the GSL program is clear. Hall and Whybrow, for example, have calculated that for students attending private schools during the 1983-84 academic year a \$5,000 GSL would have covered 26 percent of the average cost of tuition and living expenses.<sup>10</sup> Further, Sandson has noted that the amount to be repaid is equal to approximately 1.5 times the amount borrowed, which, taking inflation into account, means that students will pay little if any more than the amount originally borrowed.<sup>11</sup> In 1984-85 graduate and undergraduate medical students received a combined total of \$186.6 million through the GSL program.<sup>12</sup>

Another national program of note has been the National Direct Student Loan program (NDSL) which preceded the GSL program and marked the first step in the process of widening educational opportunities. This program, originally titled the National Defense Student Loan program, was established by the National Defense Education Act of 1958. The opening sentences of the Act made national policy explicit:

The Congress hereby finds and declares that the security of the Nation requires the fullest development of the mental resources and technical skills of its young men and women. . . . We must increase our efforts to identify and educate more of the talent of our Nation. This requires programs that will give assurance that no student of ability is denied an education because of financial need.<sup>13</sup>

The NDSL program provides low-interest loans to students who have financial need. NDSL's are school-administered funds operated on a revolving basis, meaning that the bulk of the funds are generated by

loan repayments, with some additional funding drawn from annual federal appropriations. Such appropriations, however, ceased in 1984. The borrowing limit for professional students is now \$18,000, including all money that the student has ever borrowed under the program. The amount of NDSL money borrowed by graduate and undergraduate medical students has remained stable in recent years, increasing slightly from \$17.4 million in 1979-80<sup>14</sup> to \$18.5 million in 1984-85.<sup>15</sup>

Aside from the GSL and NDSL programs, however, health professions students have in recent years relied equally heavily on financial assistance programs established specifically in the area of medical education. Of primary importance has been the Health Professions Student Loan program which was authorized by the Health Professions Educational Assistance Act of 1963. This school-administered program, which has received no federal appropriations since 1984, provides long-term low-interest loans to health professions students in accredited institutions. The HPSL program offers loans of up to \$2,500 plus tuition at a current annual interest rate of nine percent, repayable over a ten year period. Each school participating in the program is responsible for selecting the recipients of loans and for determining the amount of assistance required by a student. In response to the lack of federal capital, and the consequent erosion of revolving-loan funds, the loan volume of HPSL's has dropped from \$24.3 million in 1981-82<sup>16</sup> to \$19.0 million in 1984-85.<sup>17</sup> Along with GSL's,

Health Professions Student Loans have constituted the major source of federally subsidized low-interest loans for medical students.

Reflective of the trends in student financial assistance the Health Education Assistance Loan Program (HEAL), authorized by the Health Professions Educational Act of 1976, has come to play an increasingly important role. Under the terms of the HEAL program loans to cover educational expenses are made available from eligible lenders such as banks, credit unions, savings and loan associations, pension funds, insurance companies and eligible educational institutions. These federally insured loans carry a rate of interest based on market rates, allowing a maximum interest rate of 3.5 percent above the U.S. Treasury bill rate. Since 1981 the interest on HEAL's has, in fact, run as high as 19 percent.<sup>18</sup> With interest accruing from the instant the loan is taken the total debt resulting from a HEAL could be astronomical. For instance, Sandson estimates that annual loans of \$10,000 to \$20,000 could amount to repayments of \$16,000 to \$32,000 annually, if made over twenty-five years at 15 percent interest per year, and \$20,000 to \$40,000 per year over ten years.<sup>19</sup> The same author notes further that, based on a starting income of \$100,000, these physicians would be forced to commit between 20 and 40 percent of their initial annual income just to retire their medical school debt.<sup>20</sup> Clearly the necessity to incur such large debts is likely to have a deterrent effect on students contemplating a

medical education, most especially if they come from a low-income background.

Since the demise of the Health Professions Scholarship program in 1976 the major source of federal scholarship funding has been the National Health Service Corps Scholarship program (NHSC), which was authorized by the Emergency Health Personnel Act Amendments of 1972 and expanded by the Health Professions Educational Assistance Act of 1976. This program was established for the dual purposes of assuring an adequate supply of physicians and other health professionals in health manpower shortage areas and providing an opportunity for minority and low-income students to enter medical education. The Senate Committee on Labor and Public Welfare, in a report preceding the legislation, succinctly summed up these goals:

Frequently, students with low-income backgrounds are from physician-shortage areas in rural or urban America. The Committee is convinced that physician recruitment for rural and other shortage areas would be greatly enhanced if more young people who come from rural or urban physician-shortage areas, were encouraged to enter the medical profession.

Under the terms of the program a health professions student is offered full tuition payment and a monthly living allowance in return for service in the National Health Service Corps. For each year of scholarship support a student agrees to serve one year in a designated shortage area, with a minimum commitment of two years. In 1973-74, its first full year of operation, 372 scholarships were awarded to medicine and osteopathy students.<sup>22</sup> The first graduates entered the Corps in 1976.<sup>23</sup> In spite of substantial growth in the late 1970's,

and its clear success in attracting low-income and minority students, the NHSC scholarship program received only minimal new appropriations in 1985.

The other major scholarship program with a service commitment is the Armed Forces Health Professions Scholarship program, created in 1972 as part of the Uniformed Services Revitalization Act, and designed to attract qualified professionals into the armed services. The AFHP program pays all education-related costs plus an annual stipend of \$9,000. In return the student must commit to one year in the armed services for every year of scholarship support received. In contrast to the NHSC program, the Armed Forces program has increased moderately in recent years, with funds disbursed rising from \$44.3 million in 1981-82<sup>24</sup> to \$52.3 million in 1984-85.<sup>25</sup>

Another program of note has been the Scholarships for First Year Students of Exceptional Financial Need program (EFN), which was authorized by the Health Professions Educational Assistance Act of 1976, and established as a replacement for the Health Professions Scholarship program that was abolished by the same legislation. Under the EFN program scholarships are awarded without service or financial obligation to needy students who might otherwise be unable to pursue a career in one of the health professions. In 1984 scholarship recipients were awarded a monthly stipend of \$556 for twelve months, plus payment of tuition and fees.<sup>26</sup> In comparison to the NHSC program EFN scholarships have been of lesser importance,

largely because of the rigid definition of "exceptionally financially needy," which requires that a student have practically no financial resources.<sup>27</sup> In line with current trends the EFN program has seen its appropriations almost halved, from a peak of \$10,000,000 in 1981 to \$5,600,000 in 1984.<sup>28</sup>

Table 1 (below), which is based on financial assistance data supplied annually to the AAMC by the nation's medical schools, summarizes the various program trends discussed above:



TABLE 1

KEY SOURCES OF MEDICAL STUDENT FINANCIAL ASSISTANCE, 1978-85  
(Money amounts in Millions of Dollars)

	1978-79	1980-81	1982-83	1984-85
<b>Loans</b>				
Guaranteed Student Loans (GSL)	99.6	185.4	178.5	186.6
Health Education Assis- tance Loans (HEAL)	0.8	15.3	50.4	91.7
Health Professions Student Loans (HPSL)	19.8	22.7	22.9	19.0
National Direct Student Loans (NDSL)	12.8	16.0	14.9	18.5
<b>Scholarships</b>				
Armed Forces Health Professions (AFHP)	29.6	38.0	48.8	52.3
Exceptional Financial Need (EFN)	2.5	5.1	2.4	2.4
National Health Service Corps (NHSC)	37.9	50.1	23.5	4.0

SOURCES: "80th Annual Report on Medical Education in the U.S., 1979-80," Journal of the American Medical Association 244 (December 26, 1980), p. 2818.

"Financial Assistance for Medical Students, 1982-83," Journal of Medical Education 58 (December 1983), p. 974.

"Financial Assistance for Medical Students, 1984-85," Journal of Medical Education 61 (August 1986), p. 695.

As a result of the heavy medical school enrollment that occurred in response to the financial incentives of the 1960's and early 1970's the readiness of Congress to continue subsidizing the costs of a medical education began to wane considerably in the mid-1970's. This changing mood was summed up by Assistant Secretary for Health Theodore Cooper at the congressional hearings preceding the landmark Health Professions Educational Assistance Act of 1976:

The need and purpose of student assistance also has changed over the past decade. Ten years ago, health educators believed that scholarships and subsidized plans were necessary to assure enough qualified applicants. Today, there is a surplus of qualified applicants. The high personal satisfaction and anticipated financial rewards in all health professions are more than sufficient to attract adequate numbers of qualified applicants.<sup>29</sup>

This opinion was fuelled by the realization that the government's subsidized loan and scholarship programs, while encouraging a surplus of physicians, had done nothing to alleviate the chronic specialty and geographic maldistribution of physicians. The Senate Committee on Labor and Public Welfare, for example, noted that the problem was "pervasive" and "...rapidly growing worse, not better."<sup>30</sup> Further, in this context this same committee articulated the increasingly popular idea that continuing support for medical students should be linked to specific national health manpower objectives:

This committee in authorizing and reorganizing this legislation acts as a steward of the American people regarding the purposes and the amount of funding available for health professions schools. In that respect the committee must be constantly vigilant in asking itself that question - is the public receiving full value for the investment we are making on their behalf?<sup>31</sup>

The end product of this attitudinal transformation was the sweeping Health Professions Educational Assistance Act of 1976, which established the HEAL and EFN programs, expanded the NHSC scholarship program, restricted HPSL's and abolished the Health Professions Scholarship program. Clearly, then, this legislation marked the beginning of the recent trend away from grants, scholarships and subsidized loans towards loans guaranteed by the federal government. Such loans presently include low-interest Guaranteed Student Loans, but increasing amounts are now becoming available at higher interest rates through the Health Education Assistance Loan program. The fate of the National Health Service Corps Scholarship Program and the Health Professions Student Loan Program are illustrative of this trend. NHSC scholarships, for example, after experiencing rapid growth in the wake of the 1976 legislation, and attaining an impressive appropriations peak of \$79,500,000 in 1980,<sup>32</sup> were almost entirely phased out in 1985. Similarly Health Professions Student Loans, a key source of low-interest financing, have received no new appropriations since 1984. Only Armed Forces Health Profession Loans have experienced increases, and these have been only modest.

As these more attractive funding sources shrink or disappear, students are being forced to place an ever greater reliance upon the high-interest loans offered through the Health Education Assistance Loan program. Consequently the volume of loans has increased at an astronomical rate, from \$31.1 million in 1981-82<sup>33</sup> to \$91.7 million in

1984-85.<sup>34</sup> With a medical education increasingly requiring the amassing of onerous debts through the HEAL program it seems probable that students from low-income backgrounds, including members of minority groups, will be discouraged from pursuing a medical career, while those already enrolled in a program may find it more difficult to complete their studies.

In this context, it is necessary to note the simultaneous trend in recent years of skyrocketing education costs which have magnified the negative impact of these changes. If financial aid policy is to realize its original intent, levels of available loan and scholarship aid must keep pace with rising costs. Clearly they have not done so. The HPSL program administered by the University of Iowa College of Medicine is illustrative. Between 1980-81 and 1986-87, for example, while the cost of resident tuition increased from \$1,460 to \$4,384, the funds available through the HPSL program declined slightly from \$422,306 to \$387,799.<sup>35</sup> The general funding trends discussed above suggest that this would be a fairly typical example.

#### Federal Financial Aid Programs and Medical Education: Recent Research

To date research on financial aid in the sphere of medical education has been limited in scope, with the primary emphasis placed on brief surveys of legislation and trends followed by recommendations for federal action to improve the worsening plight of needy health professions students. Typical of this approach are articles by

Sandson, and Whybrow and Hall. Sandson, for example, has noted the decrease in federal financial aid and warned that a further decline in minority enrollment will be a likely consequence.<sup>36</sup> Interestingly, he has also suggested that the kind of massive indebtedness engendered by the HEAL program will lead to a loss of federal tax revenue as a result of personal income tax deductions.<sup>37</sup> Whybrow and Hall, in a similar vein, have noted that a trimming of federal financial aid "...could threaten the diversity, stability and quality of the applicant pool."<sup>38</sup> Other articles not specifically concerned with financial aid, such as that by Shea and Fullilove, have likewise expressed an appreciation of the key role that federal financial aid must play in maintaining the diversity of the medical school population.<sup>39</sup> However, while an awareness of the importance of financial aid is pervasive, it is noteworthy that to date no studies have been undertaken to assess the nature and extent of the impact that changes in such programs exercise on medical students. Nonetheless some important indicators have emerged, most especially in the studies of Ayers et al. and Gordon.

Gordon's general study of medical school applicants and enrollees in 1977-78, a time when student financial aid was just beginning its downturn, is revealing. In the context of this study the key finding is that from 1974 to 1977 there was a significant decline in the number of entering students from lower-middle and middle-income backgrounds (\$10,000-\$19,999).<sup>40</sup> By contrast the number of

matriculants in the low-income range (\$9,000 or less) and the upper-middle (\$21,000-\$25,000) and upper ranges increased over this same period.<sup>41</sup> The most impressive among the latter was recorded in the upper-middle income group, which increased its representation from 10 to 14 percent.<sup>42</sup> Gordon attributes these trends to financial considerations, and suggests that the declining enrollment of students from middle-income backgrounds may be due to "...the problems associated with securing adequate funds."<sup>43</sup> Interestingly he also postulates that the modest increase in low-income applicants is partially a consequence of the increase in full-pay scholarships, most importantly those offered through the NHSC program.<sup>44</sup> Given that by 1985, six years after Gordon completed his study, the availability of these scholarships has been substantially reduced, it seems likely that the financial barriers for low-income and minority students seeking a medical education will have become ever more formidable.

In another useful research endeavor Ayers et al. have studied the impact of high tuition upon the applicant pool at the Georgetown School of medicine, the school with the highest tuition in the nation. Between 1974 and 1980, the period covered by the study, tuition at Georgetown increased fourfold to \$14,750.<sup>45</sup> Surprisingly the researchers found that both the applicant and enrollee portions of the applicant pool for Georgetown remained stable during this period, effectively replicating the trends at the national level described by Gordon. What is somewhat less surprising, and crucial to the

rationale for this project, is the authors' firm belief that the continued diversity of the medical student population is dependent upon the availability of adequate funding sources. In this context they note that under two percent of the students at Georgetown financed their education without some form of financial aid, most of it derived from federal sources.<sup>46</sup> Georgetown, for example, was the largest recipient of National Health Service Corps support in the United States.<sup>47</sup>

Whether the negative consequences hinted by Ayers et al. and Gordon have in fact materialized is uncertain. It is hoped that this project can provide at least some of the answers.

Affirmative Action and National Health Manpower  
Goals: A Clear Linkage

While concerns of equity were the major motivating force behind the establishment of affirmative action programs within the sphere of medical education there can be no doubt that the speed at which such programs developed was also a result of the clear compatibility between affirmative action and national health manpower goals. As previously noted, the goals of the latter, spelled out in the authorization of student financial assistance programs, included the amelioration of the serious specialty and geographic maldistribution of physicians. The National Health Service Corps, which emerged to

meet this goal and, which was characterized by high minority and low-income participation, was the clearest manifestation of this goal compatibility. In spite of a 55 percent increase in physician supply between 1965 and 1980 such compatibility remains strong, because specialty and geographic maldistribution persists.<sup>48</sup> In the specialty category, for example, a 1982 government report noted a consistent shortage of physicians moving into primary care, the entry level into the health care system where basic medical services are provided.<sup>49</sup> In their study of the geographic distribution of physicians, Fruen and Cantwell have further noted the persistence of "...chronic shortages" in rural and central city areas, and vehemently reject the popular notion that physician surplus will automatically result in a spillover effect.<sup>50</sup> The discontinuation of funding for the NHSC Scholarship program in 1985 therefore effectively represents an attack on the principles of affirmative action in medical education and also, in so doing, further reduces the levels and quality of medical care available to the neediest populations of the United States.

Evidence for this position comes from an important recent study by Keith et al., who analyzed data on 1975 U.S. medical school graduates in order to determine how practice locations and patient populations differed between minority and nonminority graduates. One important finding was that a significantly larger proportion of minority physicians (12.6 percent vs. 6.1 percent) practiced in locations designated as health manpower shortages areas by the federal



government.<sup>51</sup> Another key finding was that a significantly larger proportion of minority graduates chose the primary care specialties of family practice, general internal medicine, pediatrics and obstetrics-gynecology (55 percent vs 41 percent).<sup>52</sup> Furthermore, Keith et al. also found that black and Hispanic graduates treated a significantly higher percentage of Medicaid patients than did nonminority graduates (31 percent for blacks, 24 percent for Hispanics, 14 percent for whites).<sup>53</sup> Interestingly the researchers found that while all physicians tend to treat relatively more patients from their own ethnic groups, less than half of the black physicians served overwhelmingly minority populations.<sup>54</sup>

The results of the Keith study, therefore, clearly illustrate the value of affirmative action, both from the perspective of encouraging social integration and in meeting national health manpower goals. Any threat to affirmative action within the sphere of medical education, through cuts in financial aid or otherwise, must inevitably also threaten the extent and quality of medical care available to the poorest sectors of American society.

#### NOTES

<sup>1</sup>Frances R. Hall and Peter C. Whybrow, "Financial Aid for Medical Students: A Review and a Proposal," Journal of Medical Education 59 (May 1984), p. 380.

<sup>2</sup>U.S. Congress, House, Committee on Interstate and Foreign Commerce, Current Health Manpower Issues, 96th Cong., 1st sess., p. 30.

<sup>3</sup>U.S., Congress, House, Health Professions Educational Assistance, H. Rept. 109 to Accompany H.R. 12, 88th Cong., 1st sess., 1963, p. 9.

<sup>4</sup>U.S., Congress, Amendments to the Public Health Service Act, Publ. L. 88-654, 88th Cong., 2nd sess., 1964, S. 2180.

<sup>5</sup>U.S., Congress, Health Professions Educational Assistance Amendments of 1965, Publ. L. 89-290, 89th Cong., 1st sess., 1965, H.R. 3141.

<sup>6</sup>U.S., Congress, Veterinary Medical Education Act of 1966, Publ. L. 89-709, 89th Cong., 2nd sess., 1966, H.R. 3348.

<sup>7</sup>U.S., Department of Health and Human Services, Characteristics of Students in the National Health Service Corps, 1973 through 1980, Pubn. No. (HSA) 81-6034, 1981, p. 4.

<sup>8</sup>Editorial, "Consequences of the Student Loan Proposals in the Administration's Fiscal 1983 Budget," Journal of Medical Education 57 (May 1982), pp. 418-19.

<sup>9</sup>U.S. President, Public Papers of the Presidents of the United States: Lyndon B. Johnson, Book II, (Washington, D.C.: Government Printing Office, 1965), p. 754.

<sup>10</sup>Hall and Whybrow, "Financial Aid for Medical Students," p. 381.

<sup>11</sup>John I. Sandson, "A Crisis in Medical Education: The High Cost of Student Financial Assistance," New England Journal of Medicine 308 (May 26, 1984), p. 1287.

<sup>12</sup>"Financial Assistance for Medical Students, 1984-85," Journal of Medical Education 61 (August 1986), p. 695.

<sup>13</sup>The National Defense Education Act, Statutes at Large (1958).

<sup>14</sup>"80th Annual Report on Medical Education in the U.S., 1979-80," Journal of the American Medical Association 244 (December 26, 1980), p. 2818.

<sup>15</sup>"Financial Assistance for Medical Students, 1984-85," Journal of Medical Education, p. 695.

<sup>16</sup>"Financial Assistance for Medical Students, 1982-83," Journal of Medical Education 58 (December 1983), p. 974.

<sup>17</sup>"Financial Assistance for Medical Students, 1984-85," Journal of Medical Education, p. 695.

<sup>18</sup>Sandson, "A Crisis in Medical Education," p. 1287.

<sup>19</sup>Ibid.

<sup>20</sup>Ibid.

<sup>21</sup>U.S., Congress, Senate, Committee on Labor and Public Welfare, Health Professions Educational Assistance Amendments of 1971, S. Rept. 92-251 on S. 934, 92nd Cong., 1st sess., 1971, p. 27.

<sup>22</sup>U.S., Department of Health and Human Services, Characteristics of Students in the National Health Service Corps, p. 4.

<sup>23</sup>Ibid.

<sup>24</sup>"Financial Assistance for Medical Students, 1982-83," Journal of Medical Education, p. 695.

<sup>25</sup>"Financial Assistance for Medical Students, 1984-85," Journal of Medical Education, p. 695.

<sup>26</sup>National Institute of Independent Colleges and Universities, Federal Student Assistance Programs: Research Materials for the Eighth Annual Meeting (Washington, D.C.: National Institute of Independent Colleges and Universities, 1984), p. 48.

<sup>27</sup>U.S. Congress, House, Committee on Interstate and Foreign Commerce, Current Health Manpower Issues, p. 37.

<sup>28</sup>National Institute of Independent Colleges and Universities, Federal Student Assistance Programs, p. 48.

<sup>29</sup>U.S., Congress, Senate, Health Manpower Legislation, 1975. Joint Hearings before the Subcommittee on Health of the Senate Committee on Labor and Public Welfare and the Subcommittee on Rural Development of the Senate Committee on Agriculture on S. 989, 94th Cong., 1st sess., 1975, p. 997.

<sup>30</sup>U.S., Congress, Senate, Committee on Labor and Public Welfare, Health Professions Educational Assistance Act of 1974, S. Rept. 93-1133 to Accompany S. 3585, 93rd Cong., 2nd sess., 1974, pp. 214-5.

<sup>31</sup>Ibid., p. 212.

<sup>32</sup>National Institute of Independent Colleges and Universities, Federal Student Assistance and Categorical Programs (Washington, D.C.: National Institute of Independent Colleges and Universities, 1980), p. 82.

<sup>33</sup>"Financial Assistance for Medical Students, 1982-83," Journal of Medical Education, p. 974.

<sup>34</sup>"Financial Assistance for Medical Students, 1984-85," Journal of Medical Education, p. 695.

<sup>35</sup>Kay Colangelo, Associate and Student Services, University of Iowa College of Medicine.

<sup>36</sup>Sandson, "A Crisis in Medical Education," p. 1288.

<sup>37</sup>Ibid.

<sup>38</sup>Hall and Whybrow, "Financial Aid for Medical Students," p. 380.

<sup>39</sup>Steven Shea and Mindy Thompson Fullilove, "Entry of Black and Minority Medical Students into U.S. Medical Schools," New England Journal of Medicine 313 (October 10, 1985), p. 939.

<sup>40</sup>Travis L. Gordon, "Study of U.S. Medical School Applicants, 1977-78," Journal of Medical Education 54 (September 1979), p. 695.

<sup>41</sup>Ibid.

<sup>42</sup>Ibid.

<sup>43</sup>Ibid., p. 696.

<sup>44</sup>Ibid.

<sup>45</sup>William R. Ayers et al., "Impact of High Tuition on Medical School Applicants and Enrollees," Journal of Medical Education 56 (October 1981), p. 795.

<sup>46</sup>Ibid., p. 799.

<sup>47</sup>Ibid.

<sup>48</sup>Ira Moscovice, "Health Care Personnel," in Introduction to Health Services, eds. Stephen J. Williams and Paul R. Torrens (New York: John Wiley & Sons, 1984), p. 309.

<sup>49</sup>U.S., Department of Health and Human Services, Third Report to the President and Congress on the Status of Health Professions Personnel in the United States, Pubn. No. (HRA) 82-2 (1982), p. II-8.

<sup>50</sup>Mary A. Fruen and James R. Cantwell, "Geographic Distribution of Physicians: Past Trends and Future Influences," Inquiry 19 (Spring 1982), p. 49.

<sup>51</sup>Stephen N. Keith et al., "Effects of Affirmative Action in Medical Schools: A Study of the Class of 1975," New England Journal of Medicine 313 (December 19, 1985), p. 1521.

<sup>52</sup>Ibid.

<sup>53</sup>Ibid., p. 1519.

<sup>54</sup>Ibid., p. 1522.

## CHAPTER II

### THE STUDY: DATA DESCRIPTION AND RESULTS

#### Objectives of the Study

The purpose of this chapter is to describe changes in the characteristics of medical school matriculants in response to declining federal assistance in recent years. The intention here is to identify the characteristics of the groups particularly affected by such a decline. While the emphasis of this project is on minority students, the study itself must necessarily be generalized to include all students, minority and nonminority alike, if an accurate basis for comparison is to be established. Such a basis is essential in the formulation of effective public policy.

Financial and academic factors play a significant role in the admissions decisions of medical schools and the ability of students to complete their programs. Hence parental income and undergraduate G.P.A. are selected as study variables, and are considered to measure adequately the level of financial and academic background of students

prior to their enrollment in medical school. With the increased financial burden on students resulting from changes in the nature and extent of federal financial support, these enrollee characteristics are expected to change over the years, as a reflection of consequent changes both in the admissions policies of medical colleges and in the motivation and incentive of students to pursue a medical education.

Besides the general discussion on enrollment trends in recent years the following hypotheses will be considered:

- H1: With the steady decline in financial support that has occurred between the years 1978 and 1985 there will be a shift towards greater representation of the higher income groups.
- H2: Gifted students from the low and middle parental income groups will be more affected than the other subgroups, and this will be reflected in a sharper decline in the matriculation of these groups relative to the others.
- H3: Since a majority of minority students come from lower income backgrounds they will be more affected than their nonminority colleagues and this will be reflected in an overall decline in the matriculation of minority students.

#### Data Description

Data are obtained from the Student and Applicant Information Management System (SAIMS), compiled by the Division of Operational Studies, Association of American Medical Colleges. SAIMS stores data on all individuals either applying to or pursuing a degree at an American medical school. The data are drawn from a number of sources including the Medical College Admission Test (MCAT), American Medical

College Application Service (AMCAS) applications and various questionnaires administered to students during the course of their study. Although there is a problem of nonresponse, this information system offers the most complete data on medical education currently available. Nevertheless, the percentage of nonresponse will be indicated wherever possible.

The following table describes the variables selected for the study:

TABLE 2  
DESCRIPTION OF STUDY VARIABLES

Variable	Category	Description
Year	1978	
	1981	
	1985	
Minority Status	Underrepresented Minority	Blacks, Hispanics, American Indians
	Nonminority	All Others
Parental Income	High	over \$30,000
	Medium	\$15,000-\$30,000
	Low	under \$15,000
Undergraduate G.P.A.	High	3.50-4.00
	Medium	3.16-3.49
	Low	2.00-3.15
Graduate Status	Graduated	
	Not Graduated	



Parental income information is provided by the MCAT applicant when he or she registers for the MCAT examination. Relatively complete information on parental income is only available from the new MCAT, which has been administered since 1978. This has imposed a limitation on the time period of this study to 1978 and subsequent years. Undergraduate G.P.A. and ethnicity information is provided by the AMCAS application.

### Results

#### Description of G.P.A. and Parental Income Characteristics

Table 3 and Table 4 show the G.P.A. and parental income characteristics of underrepresented minority and nonminority matriculants for all three years combined. While the low G.P.A. category accounts for 66 percent of minority matriculants, it accounts for only 17 percent of the nonminority group. For parental income, the distribution among minority matriculants is approximately evenly spread. This clearly is not the case among nonminority matriculants, 55 percent of whom come from a high income family background. This observation is also supported by Table 5. Amongst minority matriculants the highest enrollment percentage is observed in the low G.P.A. and middle and low parental income groups. Among nonminority matriculants, on the other hand, the highest frequencies are observed in the high G.P.A. and middle and high income categories, which

combined account for 48.85 percent of the total. These corresponding categories within the minority group, in sharp contrast, account for a mere 9.88 percent of minority matriculants. In summary, thus, it appears that minority students are considerably more likely to enter medical school both academically and financially less well prepared than their nonminority counterparts.

#### Individual Variable Trends

The proportionate representation of underrepresented minority matriculants appears stable from 1978 to 1985, accounting for about 9 percent of total enrollment (see Table 6). This, then, disconfirms the hypothesis that the matriculation of minority students would decrease in response to the declining levels of federal financial support.

The G.P.A. characteristics of both minority and nonminority matriculants have remained relatively stable, with a slight increase in the middle and high G.P.A. groups among minority matriculants, and a similarly slight increase in the medium and low G.P.A. categories within the nonminority group (see Table 7). Over 60 percent of minority matriculants consistently belong to the low G.P.A. category over all three years, in marked contrast to the nonminority group, over 50 percent of which has consistently fallen into the high G.P.A. category.

A dramatic shift in the parental income background of both minority and nonminority matriculants is observed (see Table 8). For both minorities and nonminorities a striking trend is observed, characterized by a sharp increase in the representation of the high income group, simultaneous to a sharp decline in both the middle and low income categories. In the case of minority matriculants the decline is particularly striking in the low income group, which represented 52 percent in 1978, but only 21 percent in 1985. For nonminority matriculants both the middle and low income groups are affected, accounting for a combined enrollment of 61 percent in 1978, but only 24 percent in 1981. It should be cautioned here that these dramatic shifts are partially explained by rising household incomes in the years after 1978. Even accounting for this, however, the trends remain highly significant. For example, the 16 percent increase in high-income minority households between 1978 and 1984 (from 6 percent<sup>1</sup> to 22 percent),<sup>2</sup> compares with a 36 percent rise in the medical school matriculation of high-income minority students between 1978 and 1985. These results, therefore, confirm the hypothesis that the matriculants of later years would become increasingly characterized by high parental income backgrounds.

#### Combined Variable Trends

Further evidence of the shift described above is found in Tables 9 and 10, and Figures 1-6. For minority matriculants an increase in

the higher income groups is observed, regardless of G.P.A. Particularly marked, however, is the increase in the high income/low G.P.A. category. On the other hand, a decline is observed in the case of both the low and middle income groups, although it is the low income/low G.P.A. group which is particularly affected. For nonminority matriculants all high income groups, regardless of G.P.A., show a marked enrollment increase, with the largest observed in the high G.P.A. group. Both the middle and low income groups show a decline. Especially affected are the middle income/high G.P.A. group, which declined from 26 percent to 9 percent, and the low income/high G.P.A. group, which declined from 12 percent to 3 percent. These observations are consistent with the hypothesis that gifted matriculants from low and middle income backgrounds would be hit most by declining financial aid, and that the enrollees of later years will be characterized by a high income background. However, the hypothesis postulating a negative impact on matriculants in the low and middle income groups only holds true in the case of nonminority matriculants. A different picture emerges when one looks at minority matriculants alone. Since the majority of minority matriculants are in the low G.P.A. group, the impact on gifted students is difficult to determine. The fact that overall enrollment has not dropped appears to indicate that the low income/low G.P.A. group is being swiftly replaced by the high income/low G.P.A. group.

## Attrition Rate

Attrition figures for 1978 and 1981 are calculated for both minority and nonminority matriculants (see Table 11). These figures represent the present graduation status of the matriculants of 1978 and 1981. It should be cautioned, however, that these figures present a problem of comparison for, while those of 1978 represent the complete dropout rates, the 1981 figures include repeaters and those whose studies have been interrupted for any number of reasons. Some of the matriculants included in the latter will almost certainly graduate within the next few years.

For 1978, the figures for nonminority matriculants appear relatively stable across the various G.P.A. and parental income groups, ranging from 2.5 percent to 3.7 percent. This contrasts with the figures for minority matriculants, which range from 0 percent to 14 percent across the various groups. The attrition rate of minority students is particularly high in the low income and low and middle G.P.A. groups, both of which record figures of over 10 percent. The overall attrition rate for both groups in 1981 is much higher, indicating that some still have not yet graduated. The rates for minority matriculants are generally higher than those for nonminority matriculants, reaching levels of over 40 percent in the low G.P.A./low income, medium G.P.A./low income and low G.P.A./middle income groups. These figures suggest that minority matriculants are likely to take longer to complete their program of study, especially those that are

less financially and academically prepared. The fact, however, that even controlling for income group and G.P.A., minority matriculants have a higher attrition rate, indicates that other factors aside from financial and academic background are also responsible.

### Summary of Results

This study has exposed a number of important shifts in the financial and academic characteristics of medical school matriculants from the years 1978 to 1985. Most dramatic has been the sharp rise in the representation of matriculants from high income backgrounds, a trend most marked in the nonminority group but also pronounced amongst minority matriculants. Thus Hypothesis 1 is confirmed. This has been accompanied by a decline in the enrollment of students from low and middle income backgrounds, most especially amongst gifted nonminority students. Within the minority group the sharpest decline was observed in the low G.P.A./low income category. Hypothesis 2 is, therefore, only partially confirmed, since it does not hold true for minority matriculants. Surprisingly, the matriculation of minority students has remained stable since 1978, thus disconfirming Hypothesis 3.

### NOTES

<sup>1</sup>U.S., Department of Commerce, Bureau of the Census, Current Population Reports, series P-60, No. 121, p. 32.

<sup>2</sup>U.S., Department of Commerce, Bureau of the Census, Current Population Reports, series P-60, No. 149, p. 20.

Tables and Illustrations

TABLE 3.

G.P.A. CHARACTERISTICS  
FOR MINORITY AND NONMINORITY MATRICULANTS

( FREQUENCY MISSING = 6171 )

	MINORITY STATUS					
	MINORITY		NONMINORITY		TOTAL	
	N	PCTN	N	PCTN	N	PCTN
GRADE POINT AVERAGE						
3.50-4.00	521	14.85	21362	54.19	21883	50.97
3.16-3.49	669	19.07	11335	28.75	12004	27.96
2.00-3.15	2318	66.08	6725	17.06	9043	21.06

TABLE 4.

PARENTAL INCOME CHARACTERISTICS  
FOR MINORITY AND NONMINORITY MATRICULANTS

( FREQUENCY MISSING = 13459 )

	MINORITY STATUS					
	MINORITY		NONMINORITY		TOTAL	
	N	PCTN	N	PCTN	N	PCTN
PARENTAL INCOME						
LOW INCOME	1254	37.39	4371	13.54	5625	15.78
MIDDLE INCOME	1087	32.41	10134	31.39	11221	31.48
HIGH INCOME	1013	30.20	17783	55.08	18796	52.74

TABLE 5.

COMBINED G.P.A. AND PARENTAL INCOME CHARACTERISTICS  
FOR MINORITY AND NONMINORITY MATRICULANTS

( FREQUENCY MISSING = 16216 )

		GRADE POINT AVERAGE							
		3.50-4.00		3.16-3.49		2.00-3.15		TOTAL	
		N	PCTN	N	PCTN	N	PCTN	N	PCTN
MINORITY STATUS	PARENTAL INCOME								
MINORITY	LOW INCOME	140	5.16	179	6.60	643	23.71	962	35.47
	MIDDLE INCOME	134	4.94	173	6.38	591	21.79	898	33.11
	HIGH INCOME	134	4.94	180	6.64	538	19.84	852	31.42
NONMINORITY	LOW INCOME	2255	7.68	1052	3.58	633	2.16	3940	13.42
	MIDDLE INCOME	5528	18.83	2457	8.37	1212	4.13	9197	31.33
	HIGH INCOME	8813	30.02	4792	16.32	2613	8.90	16218	55.25



TABLE 6.

MINORITY AND NONMINORITY MEDICAL SCHOOL MATRICULATION  
1978, 1981, 1985

( FREQUENCY MISSING = 818 )

	MINORITY STATUS			
	MINORITY		NONMINORITY	
	N	PCTN	N	PCTN
YEAR OF ADMISSION				
1978	1449	8.67	15268	91.33
1981	1377	8.81	14252	91.19
1985	1499	9.41	14438	90.59
TOTAL	4325	8.96	43958	91.04

TABLE 7.

G.P.A. CHARACTERISTICS  
FOR MINORITY AND NONMINORITY MATRICULANTS 1978, 1981, 1985

( FREQUENCY MISSING = 6171 )

		GRADE POINT AVERAGE						
		3.50-4.00		3.16-3.49		2.00-3.15		TOTAL
		N	PCTN	N	PCTN	N	PCTN	N
YEAR OF ADMISSION	MINORITY STATUS							
1978	MINORITY	161	14.06	217	18.95	767	66.99	1145
	NONMINORITY	7735	57.71	3550	26.48	2119	15.81	13404
1981	MINORITY	165	14.73	208	18.57	747	66.70	1120
	NONMINORITY	7051	54.72	3724	28.90	2111	16.38	12886
1985	MINORITY	195	15.69	244	19.63	804	64.68	1243
	NONMINORITY	6576	50.08	4061	30.92	2495	19.00	13132

TABLE B.

PARENTAL INCOME CHARACTERISTICS  
FOR MINORITY AND NONMINORITY MATRICULANTS 1978, 1981, 1985

( FREQUENCY MISSING = 13459 )

		PARENTAL INCOME						
		LOW INCOME		MIDDLE INCOME		HIGH INCOME		TOTAL
		N	PCTN	N	PCTN	N	PCTN	N
YEAR OF ADMISSION	MINORITY STATUS							
1978	MINORITY	593	51.88	377	32.98	173	15.14	1143
	NONMINORITY	2340	20.38	4646	40.47	4494	39.15	11480
1981	MINORITY	439	38.61	409	35.97	289	25.42	1137
	NONMINORITY	1395	12.51	3775	33.86	5979	53.63	11149
1985	MINORITY	222	20.67	301	28.03	551	51.30	1074
	NONMINORITY	636	6.58	1713	17.73	7310	75.68	9659

TABLE 9.

COMBINED G.P.A. AND PARENTAL INCOME CHARACTERISTICS  
FOR MINORITY MATRICULANTS 1978, 1981, 1985

( FREQUENCY MISSING = 1613 )

	PARENTAL INCOME	GRADE POINT AVERAGE							
		3.50-4.00		3.16-3.49		2.00-3.15		TOTAL	
		N	PCTN	N	PCTN	N	PCTN	N	PCTN
1978	LOW INCOME	63	6.90	89	9.75	310	33.95	462	48.02
	MIDDLE INCOME	44	4.82	65	7.12	199	21.80	308	34.30
	HIGH INCOME	24	2.63	25	2.74	94	10.30	143	16.78
1981	LOW INCOME	49	5.37	55	6.02	227	24.86	331	34.41
	MIDDLE INCOME	55	6.02	60	6.57	228	24.97	343	38.20
	HIGH INCOME	27	2.96	57	6.24	155	16.98	239	28.05
1985	LOW INCOME	28	3.16	35	3.95	106	11.96	169	17.57
	MIDDLE INCOME	35	3.95	48	5.42	164	18.51	247	27.51
	HIGH INCOME	83	9.37	98	11.06	289	32.62	470	55.16

TABLE 10.

COMBINED G.P.A. AND PARENTAL INCOME CHARACTERISTICS  
FOR NONMINORITY MATRICULANTS 1978, 1981, 1985

( FREQUENCY MISSING = 14603 )

		GRADE POINT AVERAGE						TOTAL	
		3.50-4.00	3.16-3.49	2.00-3.15					
		N	PCTN	N	PCTN	N	PCTN	N	PCTN
YEAR OF ADMISSION	PARENTAL INCOME								
1978	LOW INCOME	1285	12.42	512	4.95	295	2.85	2092	53.10
	MIDDLE INCOME	2657	25.67	1045	10.10	474	4.58	4176	45.41
	HIGH INCOME	2325	22.47	1173	11.33	583	5.63	4081	25.16
1981	LOW INCOME	698	6.82	350	3.42	222	2.17	1270	32.23
	MIDDLE INCOME	2040	19.93	940	9.18	490	4.79	3470	37.73
	HIGH INCOME	3037	29.67	1629	15.91	831	8.12	5497	33.89
1985	LOW INCOME	272	3.10	190	2.17	116	1.32	578	14.67
	MIDDLE INCOME	831	9.48	472	5.38	248	2.83	1551	16.86
	HIGH INCOME	3451	39.35	1990	22.69	1199	13.67	6640	40.94

TABLE 11.

ATTRITION RATES FOR 1978 AND 1981 MATRICULANTS

YEAR OF ADMISSION	PARENTAL INCOME	MINORITY STATUS											
		MINORITY			NONMINORITY								
		GRADE POINT AVERAGE			GRADE POINT AVERAGE								
		3.50-4.00	3.16-3.49	2.00-3.15	3.50-4.00	3.16-3.49	2.00-3.15						
		GRADUATE STATUS	GRADUATE STATUS	GRADUATE STATUS	GRADUATE STATUS	GRADUATE STATUS	GRADUATE STATUS						
		NON	NON	NON	NON	NON	NON						
		GRAD- UATE	GRAD- UATE	GRAD- UATE	GRAD- UATE	GRAD- UATE	GRAD- UATE						
		PCTN	PCTN	PCTN	PCTN	PCTN	PCTN						
1978	LOW INCOME	98.41	1.59	93.26	6.74	86.77	13.23	96.34	3.66	96.68	3.32	96.27	3.73
	MIDDLE INCOME	97.73	2.27	93.85	6.15	85.93	14.07	97.29	2.71	96.75	3.25	96.41	3.59
	HIGH INCOME	95.83	4.17	100	.00	90.43	9.57	97.51	2.49	97.44	2.56	97.26	2.74
1981	LOW INCOME	65.31	34.69	58.18	41.82	53.30	46.70	89.11	10.89	85.43	14.57	81.08	18.92
	MIDDLE INCOME	89.09	10.91	73.33	26.67	59.21	40.79	90.34	9.66	88.83	11.17	96.94	13.06
	HIGH INCOME	88.89	11.11	73.68	26.32	67.10	32.90	88.34	11.66	90.24	9.76	88.45	11.55

FIGURE 1

MINORITY MATRICULATION: LOW PARENTAL INCOME

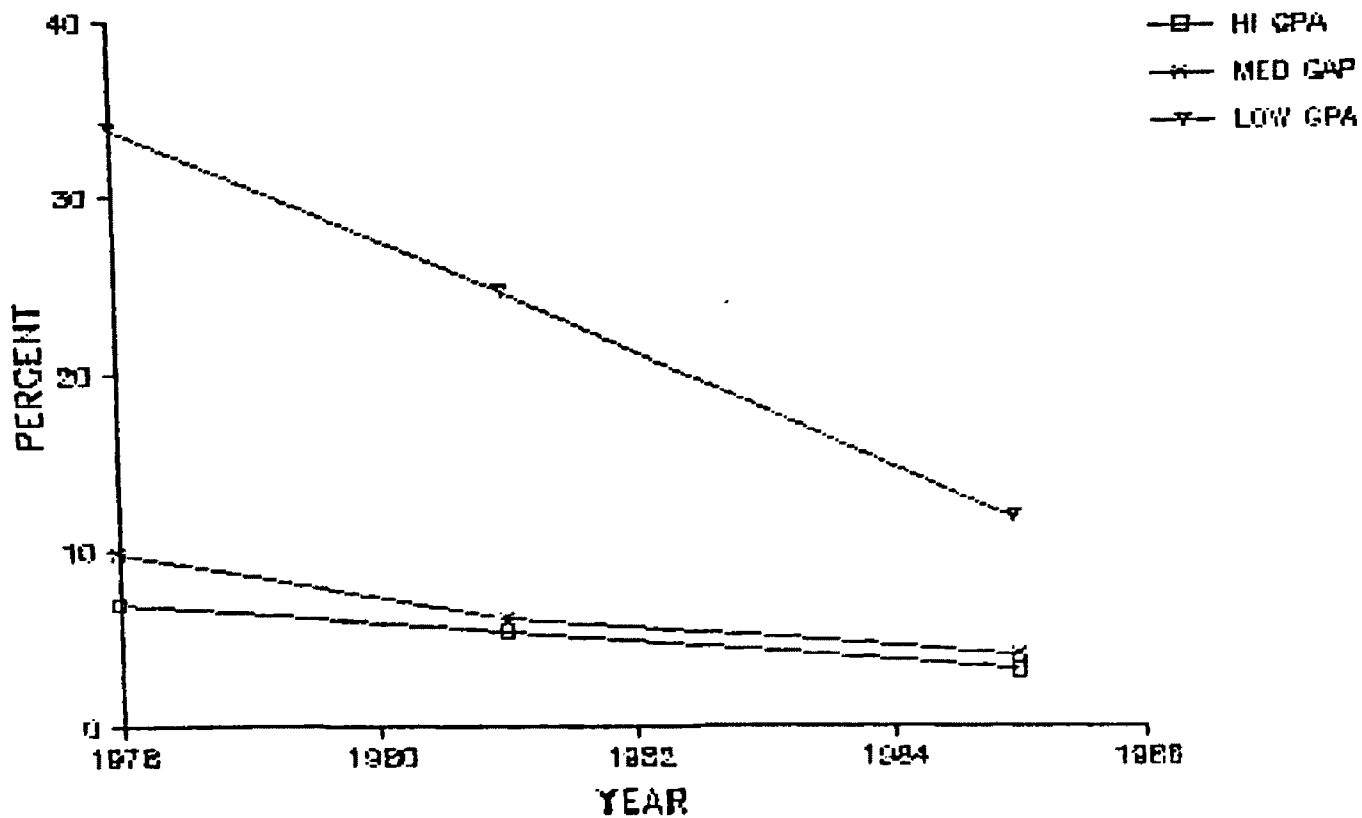
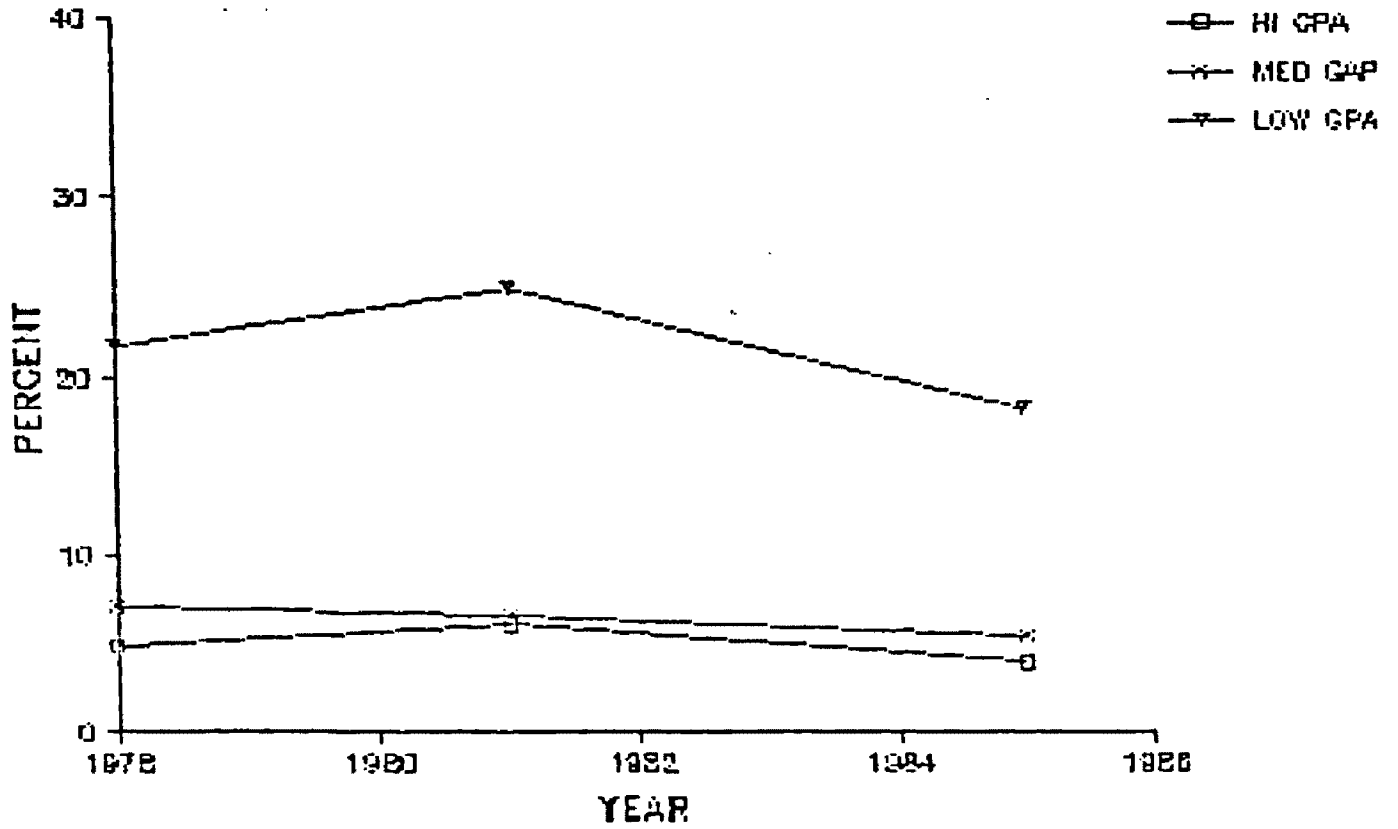


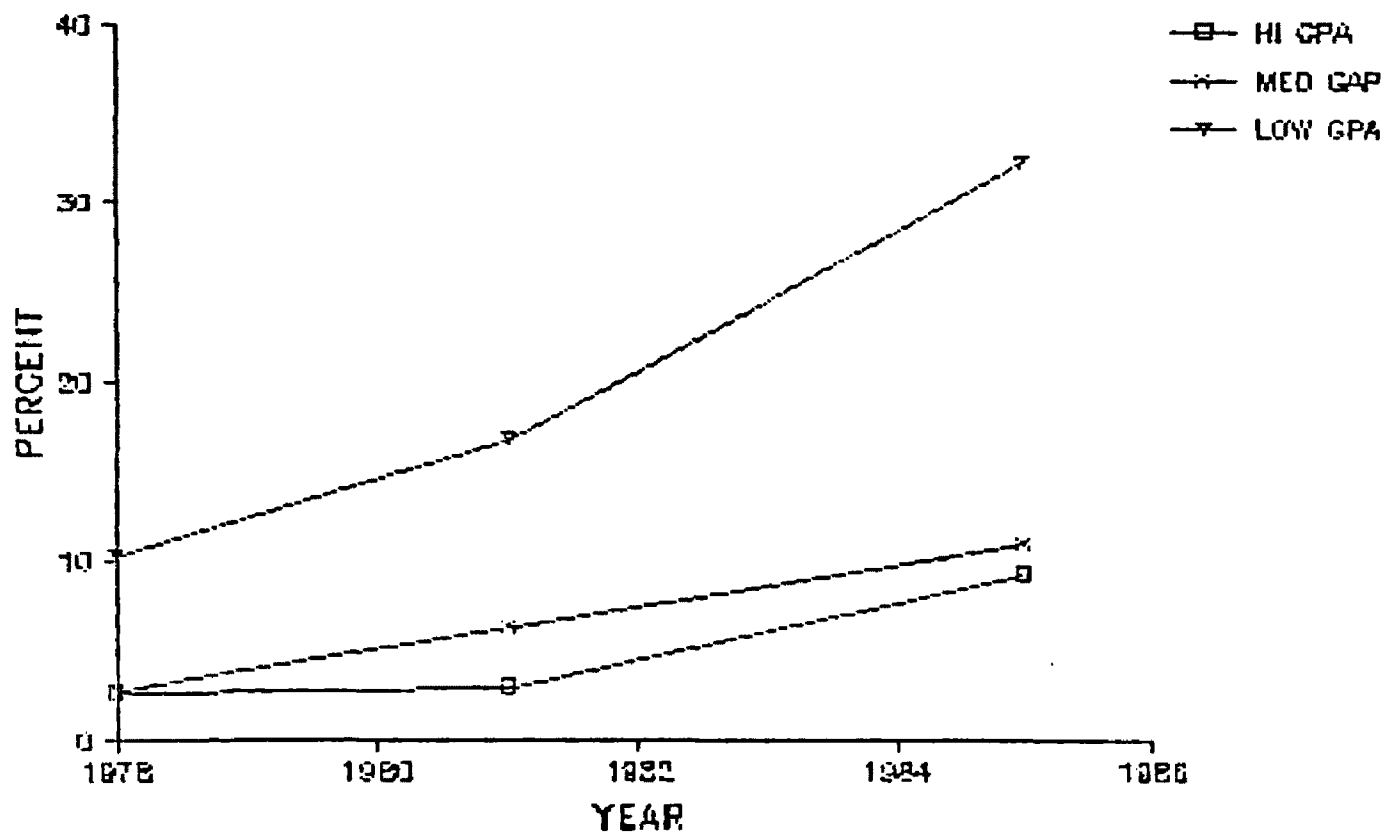
FIGURE 2

MINORITY MATRICULATION: MIDDLE PARENTAL INCOME





**FIGURE 3**  
**MINORITY MATRICULATION: HIGH PARENTAL INCOME**



**FIGURE 4**  
**NONMINORITY MATRICULATION: LOW PARENTAL INCOME**

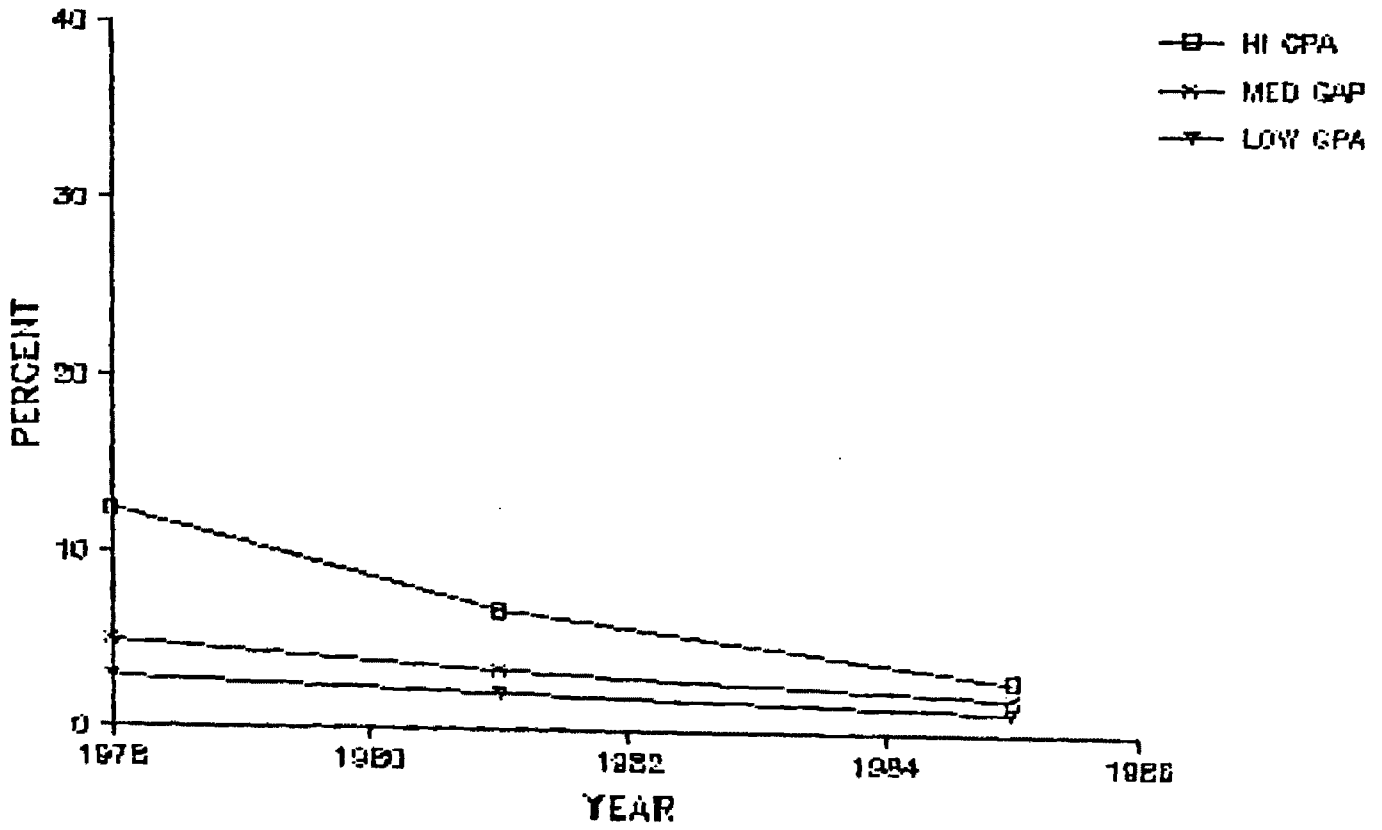


FIGURE 5

NONMINORITY MATRICULATION: MIDDLE PARENTAL INCOME

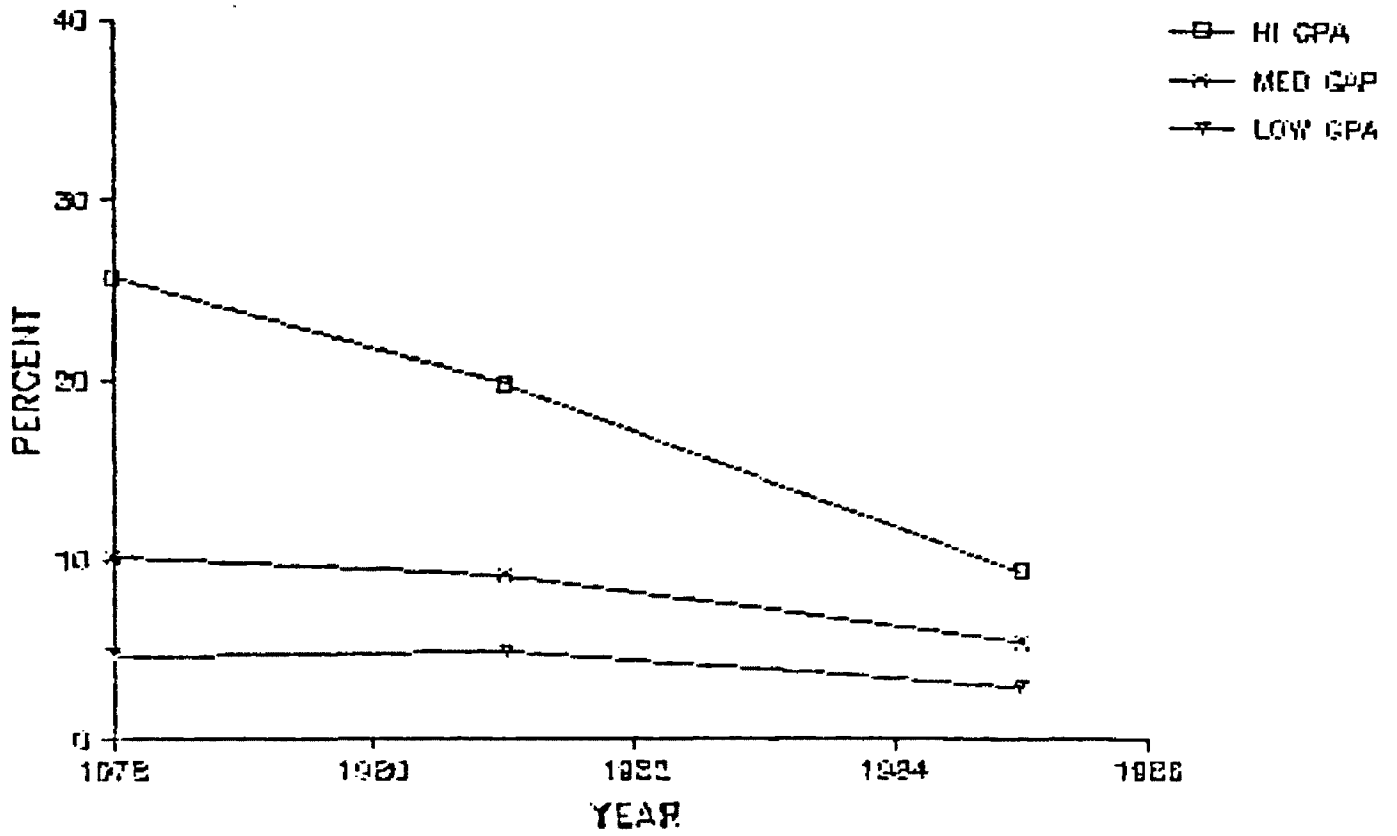
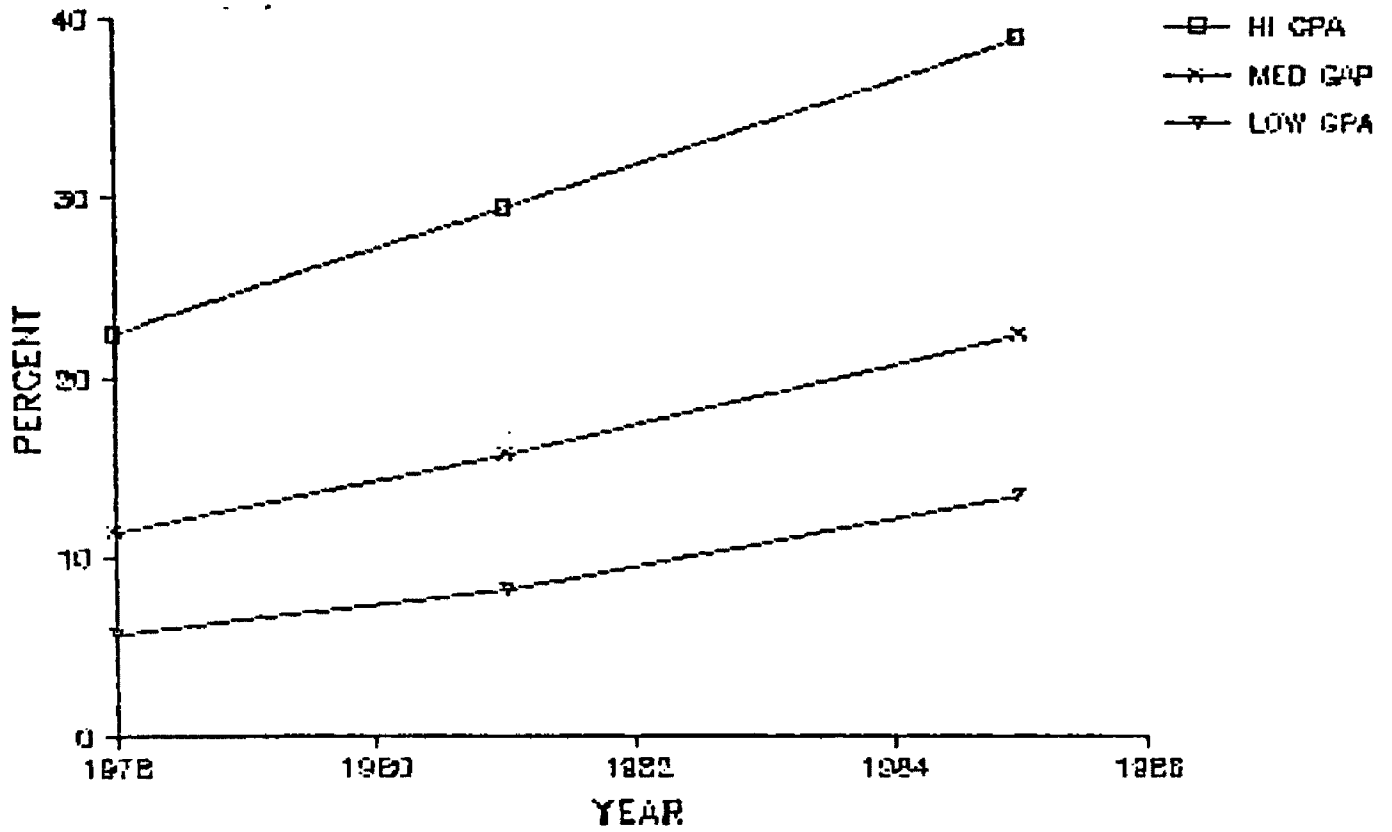


FIGURE 6

NONMINORITY MATRICULATION: HIGH PARENTAL INCOME



## CONCLUSION

The burgeoning enrollment of students from high-income backgrounds, simultaneous to a decline in the low and middle income categories, clearly represents the key finding of this study. Significantly, it is a finding that holds for both minority and nonminority students. Therefore, the following policy recommendations address the general issue of maintaining and improving educational access opportunities for lower income individuals, regardless of race. However, the observation of stable minority enrollment amidst the recent aid reductions raises one issue of special relevance to minority students that merits prior consideration. This issue relates to the value of medical school affirmative action programs.

Given the finding of the relatively unchanged academic characteristics of minority matriculants, the recent stability of minority enrollment levels can logically be attributed to the retention of effective affirmative action programs on the part of many medical schools. One particularly impressive example is the Urban Health Program (UHP), operated by the University of Illinois College of Medicine. This program, originally titled the Medical

Opportunities Program (MOP), was established in 1969 with the aim of encouraging minority enrollment and providing necessary support components on campus.<sup>1</sup> Such components, for example, include a faculty advisory system, a six-week prematriculation program, and a provision granting minority students extended time to complete their requirements. The UHP has been an outstanding success, with minority enrollment averaging 20.3 percent of first-year classes since the program's inception as an expanded version of the MOP in 1978.<sup>2</sup> Further, the attrition rate under the new program has also dropped significantly, from 18.7 to 6.7 percent.<sup>3</sup> The fact, then, that programs such as the UHP have remained in place amidst the growing challenges to affirmative action, reflects the continuing commitment of many medical schools to keeping the avenues of opportunity open for minority students. The continuation of these programs, working in combination with changes in federal student aid policy, represents the only possible hope for realizing the minority enrollment goals set by the AAMC in 1970. Moreover, if medical schools are willing to follow the lead of the University of Illinois and stretch their commitment even further, they can also confront the problem of relatively high minority attrition through strengthening and expanding the support components provided under these programs.

In turning to specific policy recommendations, it is necessary initially to establish the rationale for such changes. One key component here relates to the question of the specialty and geographic

maldistribution of physicians, an issue discussed previously at greater length. In this context the Keith study, in its findings that larger proportions of minority graduates tend both to choose the primary care specialties and to practice in designated health manpower shortage areas, provides strong evidence of the need to maintain and even expand levels of minority enrollment.<sup>4</sup> Further, the current study, in exposing the marked upward shift in the parental income backgrounds of both minority and nonminority students, suggests an urgent need to alter the current direction of federal student aid policy. Failure to do so threatens only to accentuate the current specialty and locational imbalances, for it seems unlikely that students from high-income backgrounds will opt for the less lucrative primary care specialties or be willing to practice in unattractive geographical locations.

In rationalizing changes in financial aid policy there is also a moral and social issue to be considered. Throughout the late 1960's and 1970's educational access opportunities were opened to minority and disadvantaged individuals of all races through federal support for the principles of affirmative action and through the creation of subsidized loan and scholarship programs. As a result of these programs disadvantaged students were able to enroll in institutions of higher education in record numbers. In 1977, for example, the rate of college matriculation for blacks had climbed to 50 percent, at parity with the rate for whites.<sup>5</sup> Between 1977 and 1985, however, these

rates have diverged considerably, with whites now going on to college at a 17 percent higher rate than blacks.<sup>6</sup> Unless some action to reverse this trend is taken quickly, it will only be a matter of time before it is reflected in the sphere of medical education, where the already disturbing trends in the parental income characteristics of enrollees will be compounded by declining minority enrollment. From a moral standpoint, even where middle-income whites are deterred from seeking a medical education for financial reasons, it is difficult to justify a return to a situation where educational access is determined purely on the basis of ability to pay. The results of this current study indicate that this is precisely what is happening, a point most obviously manifested in the finding of dramatic declines in the representation of gifted low and middle-income nonminority students. Also, from a social standpoint, it seems dangerous to set education policy on a course that will lead to a greater polarization of society along class and racial lines.

These factors, therefore, suggest the need for aggressive action on the part of the federal government. Most obviously, short term subsidized loan programs must be expanded. The recent raising of the annual GSL borrowing limit from \$5,000 to \$7,500 represents a move in the right direction. However, in the case of the self-generating school-administered HPSL and NDSL funds, simply raising borrowing limits is of no value unless it is accompanied by renewed and substantial federal appropriations. Without such appropriations the



individual schools cannot muster the funds necessary to even approach these limits.<sup>7</sup> It is proposed here, therefore, that appropriations for these two programs be indexed to some measure of rising educational costs, thus helping to reverse the invariable lag that has occurred in recent years.

In addition to expanding the subsidized loan programs, medical student aid policy should also place a heavy emphasis on the AFHP and NHSC service-based scholarship programs. In the case of the former this means offering them at least at present levels, while for the latter it means restoring the effectively dead program. The NHSC program, in particular, offers the benefit of simultaneously realizing the linked goals of increasing the diversity of the physician population and remedying the current specialty and geographic maldistribution of physicians, which has resulted in the denial of quality medical care to some of the nation's neediest populations.

While the above policies are necessary, it is unlikely given the current Gramm-Rudman budget limitations that they will be adopted in full. It is therefore incumbent upon individual institutions to take some initiative in establishing low-interest loan funds of their own. One long-term approach would be the establishment of self-generating loan funds. Such funds are based on the principle that the money loaned becomes a permanent part of the fund, with repayments reloaned as soon as they are received. After the initial capitalization, which should cover the period until the first repayments, the fund would

grow primarily on the basis of these repayments. The problem here, of course, is the large initial capitalization that would be required, and the possible necessity of later capitalization in order to keep pace with rising educational costs. Most medical schools, however, do have extensive private sources that they could draw upon for this initial funding.

One possible solution to the capitalization problem, however, also lies in the use of the bond market, a method employed by Dartmouth College in establishing the Dartmouth Medical Education Loan program (MELCO) in 1982. In this instance Dartmouth College, taking advantage of a June 1981 New Hampshire law allowing the sale of tax-exempt bonds to finance student loans, and with a \$500,000 gift as seed money, formed the Dartmouth Educational Loan Corporation (DELCO) to oversee the bond sale and loan program. In 1982 a DELCO bond issue at 10.5 percent yield permitted an initial interest rate of 11.9 percent, about 4 percent lower than the rate on a HEAL loan.<sup>8</sup> By 1984, as a result of employing the bond mechanism, Dartmouth had obtained a pool of four million dollars for its loan program.<sup>9</sup> The effectiveness of this method may, however, be diminished by recent legislation removing tax-exempt status from bonds employed for student loan purposes. Nonetheless, the bond market remains an option for schools to consider.

Aside from the obvious benefits to students of lower interest rates, such institutionally-based programs also have the advantage of

allowing some flexibility in setting the terms of loans, thus enabling them to be tailored more to the needs of students and to the realities of a medical education. The Dartmouth program, for example, has a three-stage graduated payment schedule related to income, with payments always set within 5 to 12 percent of the graduate's projected income. On the other hand these individual programs do carry with them certain disadvantages, most especially the requirement of large initial capital outlays and of the often extensive legal and bureaucratic machinery necessary to administer them.

While these programs may, in the present economic climate, represent the only hope for many aspiring medical students, they are in the final analysis only a poor alternative to a comprehensive federal program. There is presently already a great disparity in the extent of scholarship and loan support offered by individual schools. Thus a reliance on institutionally-based programs can only serve to further constrict the choices and access opportunities of financially disadvantaged individuals. If the federal government is genuinely concerned about ensuring equality of opportunity in all spheres of education, it must move swiftly to reverse its current policy of cutting support for scholarship and subsidized loan programs.

In conclusion, there are a number of research possibilities suggested by this study. Firstly, the observation of higher minority attrition even where parental income and academic factors are controlled for, suggests a need to identify other explanatory factors.

Such research could point to ways of improving further the effectiveness of affirmative action programs. Secondly, the current trends in federal student aid suggest an urgent need to explore the viability and potential problems surrounding the establishment of institutionally-based loan programs. Case-study research could be especially valuable in this regard. Finally, there is a clear need to research the impact of financial factors on the practice patterns of physicians. For example, do high levels of indebtedness encourage physicians to choose specialty areas that will guarantee the greatest return or, alternatively, are they tempted to opt for those they can get through the quickest? The answers to these questions have clear implications for the quality and availability of medical care and, as such, can also influence the direction of federal student aid policy in the sphere of medical education.

#### NOTES

<sup>1</sup>Jobe L. Payne et al., "Increasing the Graduation Rates of Minority Medical Students," Journal of Medical Education 61 (May 1986), p. 354.

<sup>2</sup>Ibid., p. 356.

<sup>3</sup>Ibid.

<sup>4</sup>Stephen N. Keith et al., "Effects of Affirmative Action in Medical Schools: A Study of the Class of 1975," New England Journal of Medicine 313 (December 19, 1985), pp. 1519-1525.

<sup>5</sup>"Why the Decline?," Newsweek on Campus (February 1987), p. 16.

<sup>6</sup>Ibid.

<sup>7</sup>Nicholas Ryan, University of Iowa Office of Financial Aid, interview held March 1986.

<sup>8</sup>"A Privately Financed Loan Program for Medical Students," New England Journal of Medicine 309 (November 3, 1983), p. 1130.

<sup>9</sup>Frances R. Hall and Peter C. Whybrow, "Financial Aid for Medical Students: A Review and a Proposal," Journal of Medical Education 59 (May 1984), p. 384.

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