

# Racial and Ethnic Preferences and Consequences at the University of Maryland School of Medicine

By Robert Lerner, Ph.D. and  
Althea K. Nagai, Ph.D.

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**Linda Chavez, President**

815 15<sup>th</sup> Street, NW, Suite 928

Washington, DC 20005

Phone: 202-639-0803

Fax: 202-639-0827

<http://www.ceousa.org>

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# Executive Summary

## **Preferences**

- Black applicants to UMSM are given a massive degree of preference over their white, Hispanic, and Asian counterparts.
- Hispanics, Asians, and whites are admitted with roughly the same MCAT scores. Hispanic and white science GPAs are roughly the same, while science GPAs for Asian admittees are slightly lower.
- UMSM generally admits blacks with much lower test scores and science GPAs as compared with whites, Hispanics, and Asians. In 1996 and 1999, 75 percent of blacks were admitted with test scores lower than roughly 75 percent of all white and Hispanic admittees. In those years, the median science GPA for black admittees was lower than the science GPA for 75 percent of Hispanics and whites admitted by UMSM. Seventy-five percent of blacks were admitted by UMSM with lower scores than half the Asians admitted in 1996, while 75 percent of blacks were admitted with lower scores than 75 percent of Asians admitted in 1999.
- The relative odds of admission of a black over a white applicant were 61.5 to 1 in 1996, 35.9 to 1 in 1997, 40.7 to 1 in 1998, and 20.6 to 1 in 1999.
- The odds ratios translate into massive preferences favoring blacks over other groups. For example, in 1996, the probability of admission for a black applicant with a total MCAT score of 45 and a science GPA of 3.5 was 97 percent—roughly three times the probability of a similarly qualified white, Asian, or Hispanic. The probability of admission for a white applicant with the same credentials was 33 percent; for an Asian, 28 percent; and for a Hispanic, 37 percent. For 1999, the probability of admission of a black applicant with a total MCAT score of 45 and a science GPA of 3.5 was 90 percent, as compared to 31 percent for a similar white applicant, 23 percent for an Asian applicant, and 53 percent for a Hispanic applicant. These statistics control for sex, residency, and whether the person had a parent graduating from UMSM.

## **Consequences**

- Black enrollees generally have much greater difficulty in medical school than do whites, Asians, and Hispanics, despite UMSM's massive program of academic intervention and remediation specifically for "underrepresented minorities."
- The median medical school GPA in the first two years was 2.50 for blacks, 3.00 for Hispanics, and 3.17 for Asians and for whites.

- The median medical school GPA for the third and fourth years is 3.29 for blacks, 3.50 for Hispanics, 3.50 for Asians, and 3.38 for whites.
- UMSM black enrollees perform considerably worse on the medical licensing exams than do their Hispanic, Asian, and white counterparts, again despite UMSM’s academic intervention and remediation for underrepresented minorities.
- More than a quarter of the black enrollees (7 out of 27) failed “Step 1” of the medical licensing exam on their first try. Two whites, one Hispanic, and no Asians failed. The median Step 1 score for black enrollees was roughly the same as that for Hispanics, but lower than that for 75 percent of Asian and white enrollees.
- About a quarter of the black enrollees (4 out of 15) taking “Step 2” of the medical licensing exam failed it on their first try. No student from another group failed.
- The four-year graduation rate for blacks was 68 percent. Blacks graduated at a higher rate than do Asians (63 percent), but at a much lower rate as compared with whites (82 percent). Hispanic graduation rates are not reported.

# Acknowledgments

We thank Linda Chavez and her staff at the Center for Equal Opportunity for giving us the chance to work on another major study of racial and ethnic preferences.

Several individuals deserve special mention. Hugh Joseph Beard, Jr., obtained the basic data. John Montgomery made available his unsealed data and documents. Both worked to have the materials from *Farmer v. Ramsay* unsealed for public view.

Roger Clegg offered comments and criticisms and tirelessly edited this report.

Sally Satel and John Montgomery read drafts of this report and offered insights, comments, and criticisms.

The statistical analyses, conclusions, and any mistakes are our own.

# Introduction

For more than thirty years, racial and ethnic preferences have played a key role in how admissions officers at the nation's public and private colleges and universities have chosen their undergraduate classes. A system of racial and ethnic preferences in admissions operates by establishing different standards of admission for individuals based upon their racial or ethnic background, with some students held to a higher standard and others admitted under a lower standard. Early in the last century, some colleges and universities denied admissions to Jews, blacks, women, and members of other groups even when their grades, test scores, and other measures of academic achievement surpassed those of white males who were offered an opportunity to enroll. The passage of civil rights legislation in the 1960s made this kind of discrimination illegal.

Since then, however, many colleges and universities have created “affirmative action” programs meant to boost the enrollment of students from groups whose backgrounds previously had excluded them from pursuing higher education, including post-baccalaureate education—especially blacks and, to a lesser extent, Hispanics—by granting them preferences during the admissions process. These policies, when their existence was made public, immediately became controversial, and they remain so today. Defenders of racial and ethnic preference policies claim that these policies are not discriminatory and help administrators choose between equally or almost equally qualified students, giving a slight edge to applicants who likely have faced discrimination or have come from disadvantaged backgrounds. Critics of preferences say that these policies are no better than the discriminatory ones they replaced and that, in any event, the advantages they confer upon certain applicants are much greater than supporters are willing to admit.

Roughly fifteen years ago, sociologist William Beer lamented the dearth of empirical studies of preference programs and their consequences.<sup>1</sup> The situation has improved somewhat, but the extent, operation, and consequences of racial and ethnic preferences in higher education remain one of the nation's better-kept secrets. There have been only grudging concessions that preferences have been used in admissions—or as the authors of *The Shape of the River* have put it, that admissions have been “racially sensitive.”<sup>2</sup>

In the last few years, public colleges and universities have seen their ability to use racial and ethnic preferences increasingly restricted. The enactment of California's Proposition 209 (also known as the California Civil Rights Initiative) forbids discrimination against or granting special treatment to any applicant on the bases of race, ethnicity, or sex in the public programs of the country's largest state. A similar ballot

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<sup>1</sup> William Beer, “Resolute Ignorance: Social Science and Affirmative Action,” *Society* (May/June 1987): 63-69.

<sup>2</sup> See Robert Klitgaard, *Choosing Elites* (New York: Basic Books, 1985); Thomas Kane, “Racial and Ethnic Preferences in College Admissions,” in Christopher Jencks and Meredith Phillips, eds., *The Black-White Test Score Gap* (Washington, D.C.: The Brookings Institution, 1998): 431-56; and William G. Bowen and Derek Bok, *The Shape of the River* (Princeton: Princeton University Press, 1998).

initiative in Washington state, Initiative 200, was approved by a large majority of voters in 1998. Court decisions have also limited the use of such preferences. Florida, Texas, and California have all created policies that guarantee admission to the state university system to the top graduates of their respective state's high schools regardless of race or ethnicity.

The studies published by the Center for Equal Opportunity have been the only studies, to our knowledge, to uncover and systematically document the discrimination in undergraduate admissions among America's public colleges and universities. Earlier CEO studies have focused on the public colleges and universities of Colorado, Maryland, Michigan, Minnesota, North Carolina, and Virginia, the University of Washington and Washington State University, the U.S. Military Academy and U.S. Naval Academy, as well as the branches of the University of California at Berkeley, Irvine, and San Diego. These reports, summarized and expanded upon in the recently issued CEO monograph, *Pervasive Preferences: Racial and Ethnic Discrimination in Undergraduate Admissions across the Nation*, have shown that blacks and, to a lesser extent, Hispanics receive substantial degrees of preference in public undergraduate admissions across the country.

The focus now shifts to professional schools and to subsequent performance in professional schools as a function of racial and ethnic preferences. This report on the University of Maryland School of Medicine (UMSM) is the first in a series that will analyze the extent of racial and ethnic preferences in law and medical school admissions. Additionally, this and subsequent CEO reports will investigate the consequences of racial and ethnic preferences on subsequent performance once students are enrolled.

Previous CEO studies of preferences in public undergraduate institutions of higher education have obtained some aggregate data on graduation rates for racial and ethnic groups. These have shown that blacks and Hispanics are less likely to graduate from institutions giving them admission preferences than are their white and Asian counterparts. Aggregate graduation rates are limited measures of academic performance, however, because they reflect at best a minimum standard of academic achievement.

This study of UMSM examines both the use of racial and ethnic preferences in admissions and the medical school performance of those that subsequently enrolled. The report examines the efforts extended by UMSM to keep these students in medical school. It also presents statistical evidence of how well or poorly they performed in class and on the critical medical licensing exams.



# Medical Schools' Background

Increasing underrepresented minority (URM) admissions to medical schools has been a major project of the academic medical establishment for many years.<sup>3</sup> The late Bernard D. Davis, Emeritus Professor at Harvard Medical School, recounts his firsthand experience of how Harvard began to award racial and ethnic preferences in admissions to medical school. Davis pointed out that, after the murder of Dr. Martin Luther King, Jr., the Harvard Medical School decided to admit a substantial number of black students who otherwise lacked the requisite qualifications. Not surprisingly, they performed poorly. Rather than abandoning preferences, Harvard Medical School chose to lower classroom standards. The decision was made with no open faculty debate. Departments were required to allow failing students to retake exams until everyone passed, letter grades were replaced by a pass/incomplete system (and, once a student had passed, he or she retained no trace of the incompletes), the number of required courses was reduced while the number of electives was substantially increased, passing scores on the national licensing exams were lowered, and one minority student was even allowed to graduate from Harvard after having failed the required medical licensing exam five times.<sup>4</sup>

Davis's experiences appear to be standard fare. The American Association of Medical Colleges (AAMC) and the American Medical Association (AMA) have made a concerted effort since the 1970s to increase the number of underrepresented minority physicians in America. The AAMC has collected statistics on racial and ethnic groups applying, enrolling, and completing medical school since 1960. Comparing these percentages to the percentages of groups in the general population, the medical establishment has decided that certain groups—Hispanics, blacks, and Native Americans<sup>5</sup>—are underrepresented when compared with their percentage of the U.S. population. Underrepresented minority enrollment was 10.3 percent in 1992, but these groups made up 22.1 percent of the U.S. population.<sup>6</sup>

The AAMC is strongly committed to the goal of proportional representation and encouraged medical schools across the country to graduate 3000 URM doctors by the

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<sup>3</sup> See Sally Satel, *PC, M.D.: How Political Correctness Is Corrupting Medicine* (New York: Basic Books, 2000) on the work of the AAMC and others regarding racial preferences in medical education and beyond, as part of the general politicization of health-care groups. The general summary of the political activities of these health-care groups comes from her book.

<sup>4</sup> Bernard D. Davis, "Affirmative Action and Veritas at Harvard Medical School," *Storm over Biology* (Buffalo, New York: Prometheus Books, 1986): 169-191.

<sup>5</sup> The AAMC classification system appears standardless and arbitrary. Before 1993, "Native Americans" included only Native Alaskans and American Indians, while Native Hawaiians were classified as Asian/Pacific Islanders. Since 1993, "Native Americans" has included Native Hawaiians as well as Native Alaskans and American Indians. Other Americans of Pacific Island descent (e.g., Samoan) are still classified as "Asian/Pacific Islander" and thus are not URMs. Association of American Medical Colleges, *AAMC Data Book: Statistical Information Related to Medical Schools and Teaching Hospitals, January 1999* (Washington, D.C.: AAMC): 15.

<sup>6</sup> Committee on Increasing Minority Participation in the Health Professions, Institute of Medicine, *Balancing the Scales of Opportunity: Ensuring Racial and Ethnic Diversity in the Health Professions* (Washington, D.C.: National Academy Press, 1994): 1.

year 2000. Politically, the AAMC and other health-care groups have worked actively against attempts to dismantle racial and ethnic preference policies. They came together to form Health Professionals for Diversity in 1996 and worked against passage of Proposition 209 in California. By 1998, the coalition was made up of 51 health-care interest groups, and actively (but unsuccessfully) campaigned against the passage of Initiative 200 in Washington state. The AAMC went so far as to run full-page ads in local Washington newspapers, warning voters that passage of Initiative 200 would deprive minorities of medical care. After the passage of Initiative 200, the National Medical Association (NMA), the professional association of black physicians, canceled its 2001 convention in Seattle (despite a majority in Seattle voting against Initiative 200).

The University of Maryland School of Medicine has been at the forefront at the effort to increase the number of minority medical students. UMSM, according to the Office of Admissions, would “take a lead role in the activities of the Association of Medical Colleges’ Project 3000 by 2000.”<sup>7</sup> As part of its mission, “the School of Medicine will become recognized for the rich diversity of its student body, matriculating each year increasing numbers of women and underrepresented minorities into the MD and MD/PhD Programs . . . .”<sup>8</sup> UMSM also states, “Increased diversity among the students and faculty at the UMSM has been a high priority of the school for more than 25 years and has been enhanced by Dean Donald E. Wilson, M.D., the first African-American dean of a predominantly non-minority school of medicine in the United States, and administration of the Campus.”<sup>9</sup>

UMSM has retrained its admission committee members to pay attention to “non-cognitive variables” for the sole purpose of increasing the number of underrepresented minorities in medical school.<sup>10</sup> UMSM has sent admission committee members to participate in the AAMC’s Simulated Minority Admissions Exercises (SMAE), which later became the AAMC’s Expanded Minority Admissions Exercises (EMAE). These exercises are conducted by AAMC so admission committee members can learn to look at nonacademic variables and place less weight on academic criteria when selecting minorities for medical school. AAMC does not suggest looking at these noncognitive variables when assessing whites and Asians.

In 1996, UMSM explicitly stated its intention to use the Simulated Minority Admissions Exercises for the purpose of increasing its number of black, Hispanic, and

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<sup>7</sup> Functional Statement/Office of Admissions, n.d., p. 4.

<sup>8</sup> Mission Statement/ Office of Admissions, n.d., p. 1-2.

<sup>9</sup> University of Maryland School of Medicine, Training Grant Application, Health Careers Opportunity Program, 93.822, 1996, p. 16.

<sup>10</sup> Research fails to support the AAMC’s contention that noncognitive variables are important medical school considerations. For example, Webb et al., 1997, is erroneously cited as evidence that noncognitive variables are important in predicting medical school performance. This study of two medical schools, A and B, actually shows that noncognitive variables have little or no capacity to predict success in medical school and beyond. The findings actually show that academic factors at School A were considerably more important in predicting success; noncognitive variables for medical students at School A were barely statistically significant. At the least, academic factors predicted three times better than noncognitive variables; at the most, academic factors predicted nine times better than noncognitive factors. At School B, noncognitive factors were not statistically significant at all; they predicted nothing.

Native American medical students.<sup>11</sup> UMSM trains its admission committee members through these exercises to look for noncognitive factors, “to be used when evaluating a minority applicant’s application.”<sup>12</sup> Additionally, underrepresented minority applicants meet the Associate Dean for Admissions, have lunch with current medical students, receive a tour of the medical school, and/or meet the director of recruitment or recruitment coordinator prior to their interviews.<sup>13</sup>

UMSM’s commitment to increase minority enrollment is also reflected in its reports that track minority enrollment and retention. In these documents, UMSM and the other schools that make up the University of Maryland at Baltimore (e.g., the undergraduate programs, the law school, and the schools of public health, pharmacy, nursing, and social work) provide yearly reports on such matters as each school’s minority enrollment goals, the actual number of minorities enrolled, support services provided minorities, their retention rates, and their eventual graduation rates.

According to the University of Maryland at Baltimore’s 1994 *Minority Enrollment Report*, 12 percent of medical students were black in 1993. At this time, UMSM set its five-year enrollment goal for blacks at 14 percent.<sup>14</sup> For Hispanics, who made up 2 percent of students at the medical school in 1993, UMSM set a projected goal for the 1994-through-1998 period at 3 percent.<sup>15</sup>

In its report the following year, UMSM stated that blacks made up 13 percent of medical students in 1994, and it set the projected goal for 1998 at 14 percent.<sup>16</sup> Hispanics made up 2 percent of medical students in 1994, and the projected 1998 goal was set at 3 percent.<sup>17</sup>

Having reached its black enrollment goal in 1996, UMSM then raised its goal to 18 percent for 1997 and subsequent years.<sup>18</sup> According to the 1996 report, blacks made up 15 percent of medical students in 1995, which was one percent higher than the enrollment goal laid out in previous years. Hispanics made up 3 percent of medical students in 1995, and the projected goal for 1998 was also 3 percent.<sup>19</sup>

The AAMC recognized UMSM’s success in averaging a minority enrollment of 15 percent in the 1990s.<sup>20</sup> UMSM was so successful in enrolling blacks, Hispanics, and American Indians that the dean of UMSM became the first recipient of AAMC’s Herbert W. Nickens Award for Diversity. The award goes to an individual “who has made outstanding contributions to promoting justice in medical education and health care.” The president of the AAMC commended Dean Wilson for his “dedication to the principles of diversity and equity in health care.”

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<sup>11</sup> University of Maryland at Baltimore, *Minority Achievement Report*, July 1996, p. 85.

<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

<sup>14</sup> University of Maryland at Baltimore, *Minority Achievement Report*, July 1994, p. 3.

<sup>15</sup> *Ibid.*, p. 5.

<sup>16</sup> University of Maryland at Baltimore, *Minority Achievement Report*, July 1995, p. 3.

<sup>17</sup> *Ibid.*, p. 5.

<sup>18</sup> University of Maryland at Baltimore, *Minority Achievement Report*, July 1996, p. 3.

<sup>19</sup> *Ibid.*, p. 5.

<sup>20</sup> Press Release, “AAMC Names University of Maryland Dean First Recipient of Nickens Award for Diversity,” October 28, 2000, <[www.aamc.org/newsroom](http://www.aamc.org/newsroom)>.

Clearly UMSM is on the cutting edge of minority admission and enrollment. UMSM is also the defendant in a pending reverse discrimination suit, wherein a white applicant, Robert Farmer, is claiming that UMSM discriminated against him because of his race when it turned him down for medical school. The medical school denies the charge.<sup>21</sup>

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<sup>21</sup> *Farmer v. Ramsay*, Civil No.: L98-1585 (U.S. District Court for the District of Maryland). Robert Lerner, one of the authors of this report, is an expert witness for the plaintiff in this case.

# Methodology

Just as high school seniors seeking college admissions take the SATs or the ACTs, prospective medical school students must take the Medical College Admission Test (MCAT). The MCAT is a standardized test made up of three multiple-choice subtests and, since 1993, a writing section. The three subsections are the verbal reasoning section, the physical sciences section, and the biological sciences section.<sup>22</sup> MCAT science subtests are achievement tests, not aptitude tests. They measure knowledge, not intelligence.

The physical sciences, biological sciences, and verbal reasoning subtests are given subscores, each ranging from a low of 1 to a high of 15. In addition, the writing sample is given a letter grade, ranging from J to T.

CEO obtained the data on individual applicants' admission status (accept or reject), matriculation status (enroll or not), racial or ethnic group membership, sex, state of residency, whether a parent had graduated from UMSM, UMSM's weighted total MCAT score, individual MCAT subscores, and undergraduate science, nonscience, and overall college GPAs. The weighted total MCAT scores were provided by UMSM as part of the data obtained by CEO through a freedom-of-information request. As noted above, the MCAT is made up of four subtests: verbal reasoning, physical science, biological science, and writing. USMS's weighted total score is obtained by doubling the writing score and adding that number to the physical science, biological science, and verbal reasoning subscores.

While data were obtained for UMSM from 1993 through 1999, the focus below is for the most part on admissions data from 1996 and 1999. Additional statistical analyses were performed on data from 1996 through 1999 and are included in relevant sections on odds ratios. We omit from our data analyses those cases for which ethnicity is listed as "other," "missing," or "unknown." We also omit Native Americans because of their small numbers in this context. Lastly, we omit cases with missing academic data.

In addition, we obtained data on the subsequent performance of those who enrolled at UMSM in the fall of 1996. We have data on their medical school grades, which is reported in the form of their GPAs for their first and second years, and their GPAs for their third and fourth years in medical school. We have information on whether or not these individuals graduated from medical school or not. Finally, we have their scores on the first two parts of the United States Medical Licensing Examination, the USMLE Step 1 (up through the third try) and the USMLE Step 2 (first try only).

We do not report group means for test scores or GPAs. Using group means places greater weight on extreme values than is warranted. A few unusually high or low scores can have a substantial effect on the value of the mean. Standard deviations, which are based on squared deviations from the mean, are even less useful for describing the spread

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<sup>22</sup> Association of American Medical Colleges, 1998, *MCAT Interpretive Manual* (Washington, D.C.: Association of American Medical Colleges): 1-5.

of cases for asymmetrical, badly skewed distributions. This is because standard deviations reflect the mathematical square of these extreme values.

The median, however, and related statistics are far less affected by the values of extreme cases. The median, or the score at the 50<sup>th</sup> percentile, represents the middle of the distribution. Fifty percent of all students have greater scores, and 50 percent have lower scores.

We also report scores at the 25th and 75th percentile, again to deal with the problem of extreme cases. While the median represents the middle of the distribution, the 25th and 75th percentile scores taken together represent the actual spread of scores. For example, a 3.25 GPA at the 25th percentile means that 25 percent of GPAs were below 3.25, while 75 percent of GPAs were above it. A GPA of 3.90 means that 75 percent of scores were below 3.90, while 25 percent were above it.

# University of Maryland School of Medicine Preferences

## ***Applicants, Admittees, and Enrollees 1996***

3,744 individuals applied for admission to the University of Maryland School of Medicine in 1996.<sup>23</sup> 831 were residents of the state of Maryland. 2,913 were nonresidents. UMSM admitted 278 (7 percent of applicants). Twenty-five percent of in-state applicants were admitted, as were 2 percent of out-of-state applicants; 133 accepted applicants enrolled. A majority of applicants, admittees, and enrollees was white.

### UMSM applicants, 1996

- 12 percent black
- 4 percent Hispanic
- 28 percent Asian
- 55 percent white

### UMSM admittees, 1996

- 19 percent black
- 3 percent Hispanic
- 23 percent Asian
- 54 percent white

### UMSM enrollees, 1996

- 19 percent black
- 4 percent Hispanic
- 22 percent Asian
- 56 percent white

### UMSM overall admission rates, 1996

- 12 percent of black applicants
- 6 percent of Hispanic applicants
- 5 percent of Asian applicants
- 7 percent of white applicants

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<sup>23</sup> Applicants listed as “No response,” “American Indian,” and “Alaskan Native” were dropped from the analysis.

### ***Applicants, Admittees, and Enrollees—1999***

2,563 individuals applied for admission to the University of Maryland School of Medicine in 1999.<sup>24</sup> 596 were residents of the state of Maryland. 1,967 were nonresidents. Of these, 262 (10 percent of applicants) were admitted—33 percent of residents and 3 percent of nonresidents—and 130 enrolled. A majority of applicants, admittees, and enrollees was white.

#### UMSM applicants, 1999

- 14 percent black
- 5 percent Hispanic
- 26 percent Asian
- 55 percent white

#### UMSM admittees, 1999

- 15 percent black
- 6 percent Hispanic
- 19 percent Asian
- 60 percent white

#### UMSM enrollees, 1999

- 14 percent black
- 4 percent Hispanic
- 21 percent Asian
- 56 percent white

#### UMSM overall admission rates, 1999

- 11 percent of black applicants
- 12 percent of Hispanic applicants
- 8 percent of Asian applicants
- 11 percent of white applicants

### ***Differences in MCAT Scores—1996 and 1999***

The distribution of MCAT scores by groups was roughly the same in 1996 and in 1999. The overwhelming majority of blacks admitted by UMSM has substantially lower scores than most Hispanics, Asians, and whites admitted.

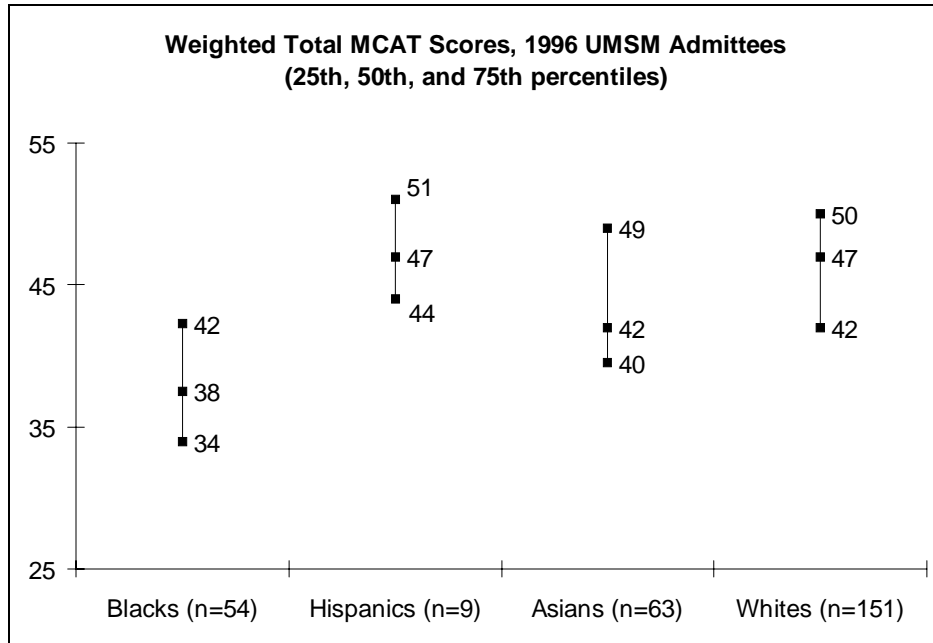
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<sup>24</sup> Ibid.



**1996.** Figure 1 shows the weighted total MCAT score as used by UMSM for 1996 admittees.<sup>25</sup> They are displayed for each racial and ethnic group. In 1996, Hispanic admittees had the highest MCAT scores of the four groups at all three percentiles, although the differences at all three levels between Hispanic and white admittees is, at most, two points.

**Figure 1**



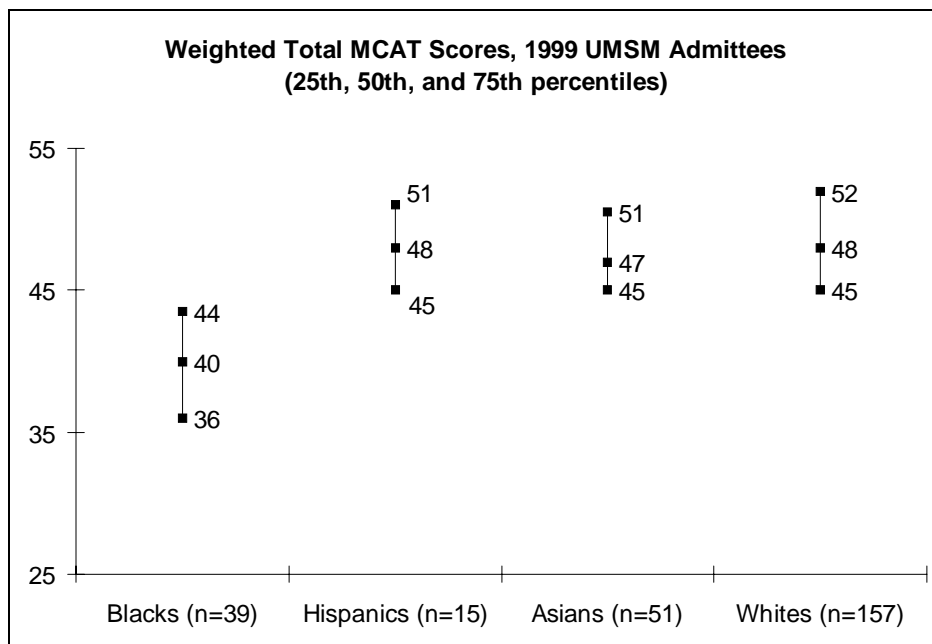
In 1996, black admittees had substantially lower MCAT scores than the other three groups. There is a nine-point gap in median scores between black and Hispanic admittees, a four-point gap between blacks and Asians, and a nine-point gap between blacks and whites.

The total MCAT score for 1996 black admittees at the 75<sup>th</sup> percentile is 42. This is lower than the MCAT score at the 25<sup>th</sup> percentile of Hispanic admittees. It is the same as the 25<sup>th</sup> percentile score of white admittees, and only two points higher than the MCAT score of Asian admittees at the 25<sup>th</sup> percentile. In other words, 75 percent of all blacks admitted to UMSM in 1996 had lower MCAT scores than roughly 75 percent of all Hispanic, Asian, and white admittees.

**1999.** A similar pattern is found in 1999 (see Figure 2). White, Hispanic, and Asian total MCAT scores are roughly the same, but black total MCAT scores are significantly lower.

<sup>25</sup> See the previous section, “Methodology,” for a more detailed discussion on the creation of the weighted total MCAT score.

Figure 2



The median MCAT score for black admittees is eight points lower than the median score for Hispanic and white admittees, and is seven points lower than the median score for Asian admittees.

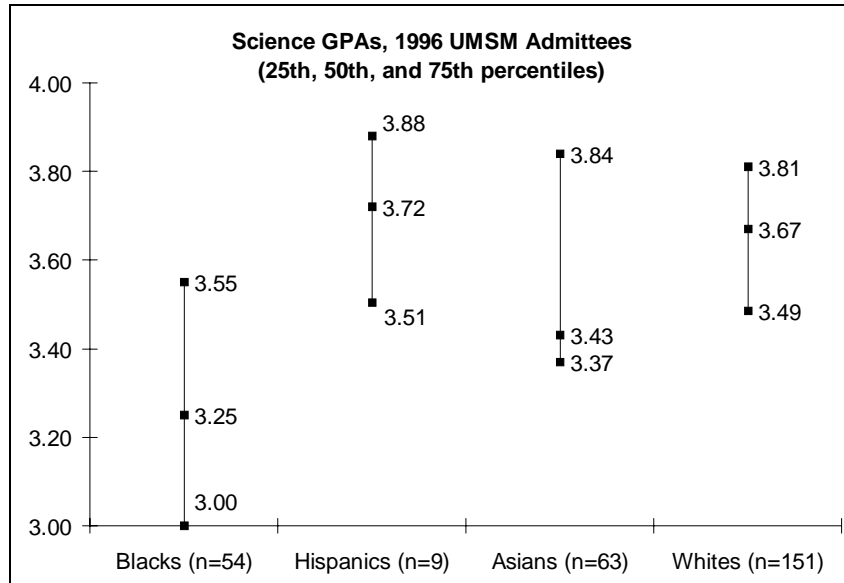
Moreover, the total MCAT score for black admittees in 1999 is lower than the total MCAT score at the 25<sup>th</sup> percentile for Hispanic, Asian, and white admittees. The MCAT score for black admittees at the 75<sup>th</sup> percentile in 1999 is 44, while the MCAT score for Hispanic, Asian, and white admittees at the 25<sup>th</sup> percentile is 45. Thus, 75 percent of all black admittees in 1999 had lower MCAT scores than 75 percent of all Hispanics, Asians, and whites admitted in 1999.

### ***Differences in Science GPAs—1996 and 1999***

There is more overlap in science grades among blacks, Hispanics, Asians, and whites, although there are gaps here as well. Hispanic and white science GPAs are generally higher than black and Asian science GPAs in both years. In general, blacks were admitted with lower science grades as compared to Hispanics, Asians, and whites.

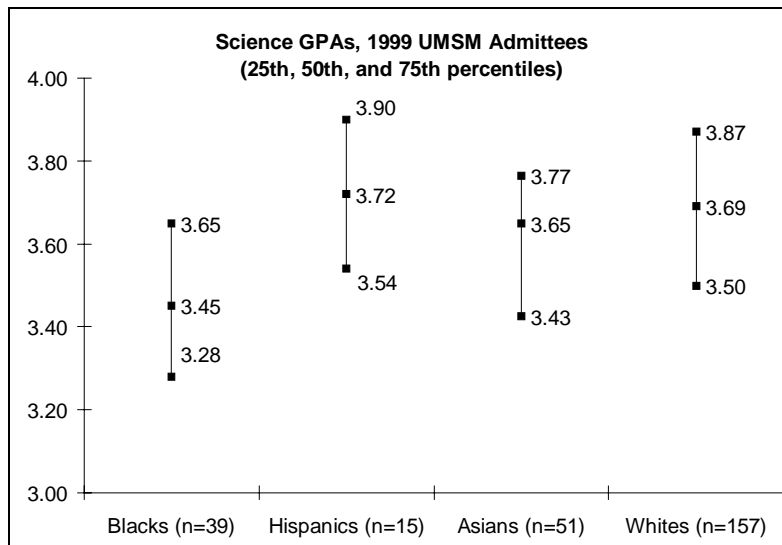
**1996.** Figure 3 displays undergraduate science GPAs for each group in 1996 by the 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> percentiles.

**Figure 3**



The median Hispanic and white science GPAs are higher than the GPAs for blacks and Asians. The median Asian science GPA is roughly two-tenths of a grade-point higher than the black science GPA. Both groups' median GPAs are lower than the GPAs for Hispanics and whites at the 25<sup>th</sup> percentile. This means that roughly half the blacks and Asians admitted to UMSM had lower college grades than 75 percent of Hispanic and white admittees.

**Figure 4**



**1999.** Figure 4 presents science GPA data for 1999. Hispanic and white GPAs are roughly the same, while the GPAs of Asians in 1999 are somewhat lower and black GPAs are lower still. The median GPA of black admittees is 3.45, which is lower than the GPA at the 25<sup>th</sup> percentile for Hispanics, Asians, and whites, meaning that half the blacks were admitted with lower science grades compared to roughly 75 percent of all Hispanic, Asian, and white admittees.

### ***Rejectees vs. Admittees***

In this section, where we compare the academic qualifications of rejectees versus admittees, we will focus on Maryland residents because so few nonresidents were admitted. Only 2 percent of nonresident applicants were admitted to UMSM versus 25 percent of Maryland residents.

**1996.** Among Maryland residents in 1996, UMSM rejected 165 Asians, 104 blacks, 34 Hispanics, and 319 whites. Of these, 44 Asians, 6 Hispanics, and 81 whites were rejected despite equal or higher science grades than the median GPA of black admittees. Similarly, 92 Asians, 14 Hispanics, and 186 whites were rejected despite having the same or higher total MCAT scores than the average black admittee. Finally, UMSM rejected 43 Asians, 6 Hispanics, and 86 whites with better grades *and* higher test scores than the median college GPA and total MCAT scores of black admittees.

**1999.** UMSM rejected 78 black, 124 Asian, 7 Hispanic, and 189 white Maryland residents who applied to the medical school in 1999. Of these, 60 Asians, 2 Hispanics, and 104 whites were rejected despite having equal or higher science grades than the average black admittee. Similarly, 63 Asians, 4 Hispanics, and 109 whites with equal or higher MCAT test scores than the black median were rejected. Finally, 19 Asians, 2 Hispanics, and 36 whites were rejected despite having the same or higher GPAs *and* MCAT totals as the average black admittee.

### ***Logistic Regression Analysis and Odds Ratios***

Admitting students based on racial and ethnic preferences results in schools accepting preferred minorities with lower test scores and grades as compared to white students at the same school. Admission officers essentially reach down into the applicant pool and pull up certain students, a practice that necessarily results in at least some whites with better credentials than preferred minority admittees being rejected from the same schools, despite their superior qualifications.

Although the data presented thus far provide substantial evidence of racial and ethnic preferences at UMSM, it is possible to make the case even stronger and considerably more precise. The most powerful means of assessing the degree of racial and ethnic preference in admissions is to develop statistical models that predict the probability of admission at a school for members of the different ethnic and racial groups, holding constant their qualifications. This is done by computing a multiple logistic regression equation that predicts admission decisions by race and ethnicity and that includes MCAT scores and science grades, among others, as statistical control variables.

We use multiple logistic regression analysis as our statistical technique because of the nature of the data provided. One way of conventionally expressing a relationship

between the independent and dependent variable is by using correlation coefficients. A negative correlation coefficient of -1.0 signifies a perfect negative relationship between the independent (predictor) variable and the dependent (or outcome) variable, whereby an increase in the value of the independent variable yields a decrease in the value of the dependent variable. A positive correlation coefficient of 1.0 signifies a perfect positive relationship between the two variables; as the independent variable increases, so does the dependent variable. Strictly speaking, however, we cannot use correlations to analyze admissions data because correlations and standard multiple regression analysis require a dependent variable that is non-binary in form. In the case of an applicant's admission status, the dependent variable (individual admission status) is binary in form—reject versus admit. To get around this binary-variable problem, we rely on multiple logistic regression equations and their corresponding odds ratios.

The odds ratio is somewhat like a correlation coefficient, except instead of varying from 1.0 to -1.0, it varies between zero and infinity. An odds ratio of 1.0 to 1 means that the odds of admissions for the two groups are equal. It is equivalent to a correlation of zero. An odds ratio greater than 1.0 to 1 means that the odds of members of Group A being admitted are greater than those for members of Group B, in precisely the amount calculated. An odds ratio of less than 1.0 to 1 means the members of Group A are less likely to be admitted than those in Group B. The former is similar to a positive correlation, the latter similar to a negative correlation.

The statistical technique of multiple logistic regression allows us to present admissions data in terms of the relative odds of those in Group A being admitted compared to Group B while simultaneously controlling for a host of other possibly confounding variables. The value of the odds ratio is that it provides a relatively direct summary measure of the degree of racial or ethnic preference given in the admissions process for a particular school.

Logistic regression equations predicting the likelihood of admissions were computed for the 1996 and the 1999 UMSM applicant pools, controlling for total MCAT scores, science grades, alumni, sex, and in-state residency. We were able to derive the odds of admission from these equations for each minority group relative to that of whites, while simultaneously controlling for the effects of these other variables.<sup>26</sup>

Logistic regression analysis also allows us to test for statistical significance. Statistical calculations always include what is called a *p*-value. When results are deemed to be statistically significant, this means that the calculated *p*-value is less than some pre-determined cut-off level of significance. The level of significance conventionally is reported in the form of " $p \leq .05$ ." This value means that, with these data, there is a probability equal to or less than 5 percent that the difference found between one group and another (e.g., blacks versus whites, Hispanics versus whites, or Asians versus whites, since minority groups are being compared to whites) is due to chance. It is a convention in statistical studies to use the 0.05 value. In more stringent analyses, 0.01 (one in 100), or occasionally, 0.001 (one in 1,000) can be used as the cut-off. Any *p* value greater than 0.05 (or the more stringent 0.01) is rejected, and the results are said to be nonsignificant.

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<sup>26</sup> For a discussion of logistic regression and a more complete discussion of odds ratios, see Alan Agresti, *Introduction to Categorical Data Analysis* (New York: John Wiley and Sons, 1996).

A difference that is statistically significant has very little chance of being the result of chance—that is, a statistical fluke.

In the next section, we discuss odds ratios derived from comparing blacks to whites, Hispanics to whites, and Asians to whites at UMSM. Statistically significant results are also noted. The size of the odds ratio reflects the strength of the association between racial or ethnic preference and admission status. An odds ratio equal to or greater than 3.0 to 1 is commonly thought to reflect a strong relationship; an odds ratio of about 2.0 to 1 reflects a moderate association, while a relative odds ratio of 1.5 or less to 1 indicates a weak relationship. Of course, an odds ratio of 1.0 to 1 indicates no relationship.<sup>27</sup> Finally, a *very* strong relationship might be taken to be the rough equivalent of the relative odds of smokers versus nonsmokers dying from lung cancer, which in one well-known study is calculated as 14 to 1.<sup>28</sup>

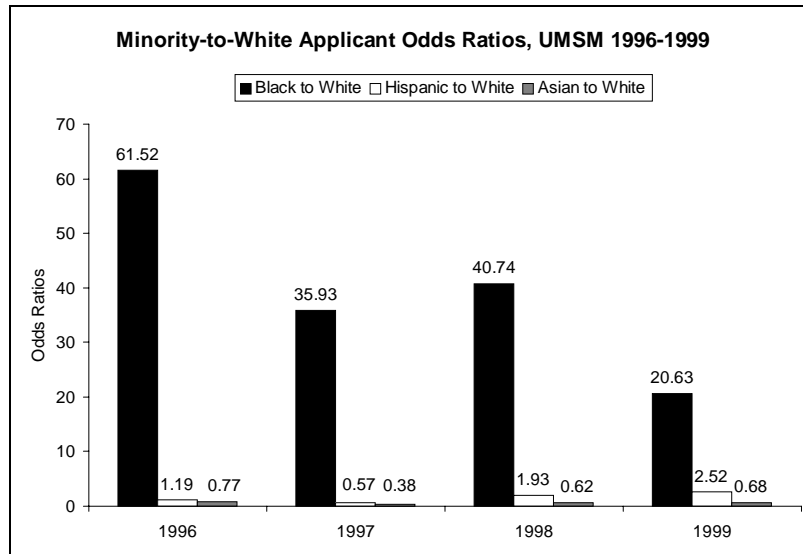
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<sup>27</sup> See David E. Lilienfeld and Paul D. Stolley, *Foundations of Epidemiology*, 3<sup>rd</sup> edition (New York: Oxford University Press, 1994): 200-202.

<sup>28</sup> Taken from a 20-year longitudinal study of British male physicians by R. Doll and R. Peto, as quoted in Agresti, *Introduction to Categorical Data Analysis*, p. 47.

## Relative Odds of Admission to UMSM

Figure 5



Group	1996	1997	1998	1999
Black to White	61.52*	35.93*	40.74*	20.63*
Hispanic to White	1.19	0.57	1.93	2.52
Asian to White	0.77	0.38**	0.62 <sup>#</sup>	0.68
*Statistically significant at $p \leq .0001$				
**Statistically significant at $p \leq .001$				
<sup>#</sup> Statistically significant at $p \leq .05$				

**1996.** As displayed in Figure 5, UMSM awards an extremely large degree of preference to blacks but not to Hispanics and Asians over whites. Controlling for MCAT scores, science grades, sex, residency, and alumni status, the relative odds of a black applicant being admitted over a white applicant in 1996 was roughly 62 to 1. The probability of such an odds ratio occurring by chance is less than one in ten thousand. For a Hispanic applicant, the odds ratio was approximately 1.19 to 1, and for Asians it was approximately 0.77 to 1 (see Figure 5). The Hispanic-white and Asian-white odds ratios are not statistically significant.

In other words, controlling for the other factors, UMSM likely grants preferences to black over white applicants. There is, however, no statistical evidence that Hispanics

and Asians receive preferences over whites or that whites receive preferences over Hispanics or Asians.

**1997.** The degree of preferences awarded black applicants relative to whites was less in 1997 than in 1996. Controlling for MCAT scores, science grades, and other variables, the relative odds of a black applicant being admitted over a white applicant were roughly 36 to 1. It is less than half of what it was in 1996, but it is still extremely large and statistically significant. The Hispanic-to-white odds ratio is 0.57 to 1, which is not statistically significant. The Asian-to-white odds ratio is 0.38 and is statistically significant,<sup>29</sup> raising the possibility of a moderate degree of preference awarded white over Asian applicants.

**1998.** In 1998, racial preferences were also given to black over white applicants, all other things being equal. The odds ratio of black to white applicants that year was roughly 41 to 1, and is statistically significant. There is no evidence of preference awarded Hispanics over whites, as the odds ratio of Hispanics to whites (1.93 to 1) is not statistically significant. There is some evidence that preferences are given to whites over Asians, however. The Asian-to-white odds ratio in 1998 is 0.62, and is statistically significant. The Asian-to-white odds ratio is only moderate in size.<sup>30</sup>

**1999.** In 1999, the degree of preferences awarded blacks relative to whites was considerable, but less than that in 1996, 1997, and 1998. Controlling for MCAT scores, science grades, and other variables, the relative odds of a black applicant being admitted over a white applicant in 1999 were roughly 21 to 1. The odds ratio of Hispanic to white applicants is 2.52, and is not statistically significant. There is no evidence that ethnic preferences are awarded Hispanic over white applicants. There is also no evidence that whites receive preference over Asians in 1999, since the odds ratio of Asian-to-white applicants was 0.68 to 1, which is not statistically significant.

### ***Probabilities of Admission to UMSM***

The meaning of the logistic regression equation results and their associated odds ratios may be difficult to grasp because the equations are complex and hard to explain without resorting to mathematical formulations. A more intuitive way to grasp the underlying dynamic of preferential admissions is to convert these logistic regression equations into estimates of the probabilities of admission for individuals with different racial/ethnic group membership, given the same MCAT scores and grades. In this section, we compare the probabilities of admission for individuals belonging to these different groups, using the logistic regression equation specific to each year. The probability calculations provide an estimate of the admission chances for members of each group, all with the same test scores and grades, alumni and residency status, and sex.

We chose to examine the probabilities for an in-state male applicant with no alumni connections to UMSM.<sup>31</sup> The same set of test scores and science GPAs are entered for blacks, whites, Hispanics, and Asians. Then we calculated the chances of

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<sup>29</sup> The reciprocal of the Asian-to-white odds ratio of 0.38 is 2.63 to 1, an odds ratio that is considered to be moderate in size (see previous discussion on odds ratios and relative strength of association).

<sup>30</sup> The reciprocal of the Asian-to-white odds ratio of 0.62 is 1.61. This is a moderate association.

<sup>31</sup> We could have compared probabilities of admission for any combination of alumni status, residency status, and sex.

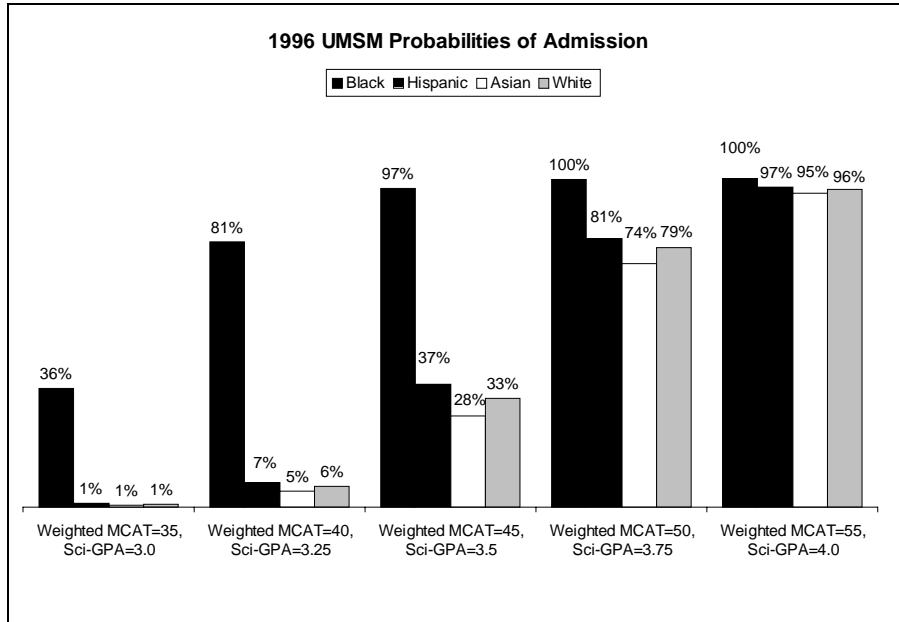


admission for a black applicant, a white applicant, a Hispanic applicant, and an Asian applicant with those academic qualifications. These calculations do not change the statistical results reported in the earlier section on odds ratios. They simply provide an easier-to-understand interpretation of their meaning.

The differences in odds ratios translate into large differences in the probability of admission based on an applicant’s race. The probability of admission is presented below, first for the 1996 and then for the 1999 applicant pool. We examine the probability of admission, keeping constant test scores and grades, and limiting our comparisons to in-state male applicants with no relative having previously graduated from UMSM.

**1996.** As displayed in Figure 6, a black applicant who was an in-state male, with no relative having graduated from UMSM, with a total MCAT score of 35 and a science GPA of 3.00, would have a 36 percent chance of admission. Hispanic, Asian, and white applicants with such academic credentials and similar backgrounds would have had a 1 percent chance of admission in 1996.

**Figure 6**



If the same 1996 black applicant had an MCAT score of 40 and a GPA of 3.25, he would have had an 81 percent chance of admission, despite a score of 40 being only slightly higher than the average for all MCAT test takers in the country.<sup>32</sup> That is, having a score that is only slightly higher than the national average and having roughly a B-plus average is still good enough for UMSM to admit eight out of every ten black in-state male applicants with no alumni connections. In contrast, an Asian applicant from the same background and with the same scores would have had only a 5 percent chance of admission, and a similar Hispanic or white applicant, a 7 and 6 percent chance, respectively.

A black applicant with a total MCAT score of 45 and an overall science GPA of 3.5 would have had a 97 percent chance of admission in 1996. A Hispanic applicant would have a 37 percent chance of admission, while a comparable white applicant would have had a 33 percent chance, and an Asian only a 28 percent chance.

With an MCAT score of 50 and a GPA of 3.75, a black applicant was essentially guaranteed admission in 1996 (100 percent chance). Similar applicants from the other groups would also have had a good chance of admission. A Hispanic applicant with the same credentials and background had an 81 percent chance; a white would have had a 79 percent chance; and an Asian, a 74 percent chance.

At the very top, with an MCAT of 55 and a science GPA of 4.0, Hispanic, white, and Asian applicants approach a certainty of admission, controlling for the other factors. With these qualifications in 1996, 97 percent of Hispanics, 96 percent of whites, and 95 percent of Asians would be likely to be admitted, as well as all such black applicants.

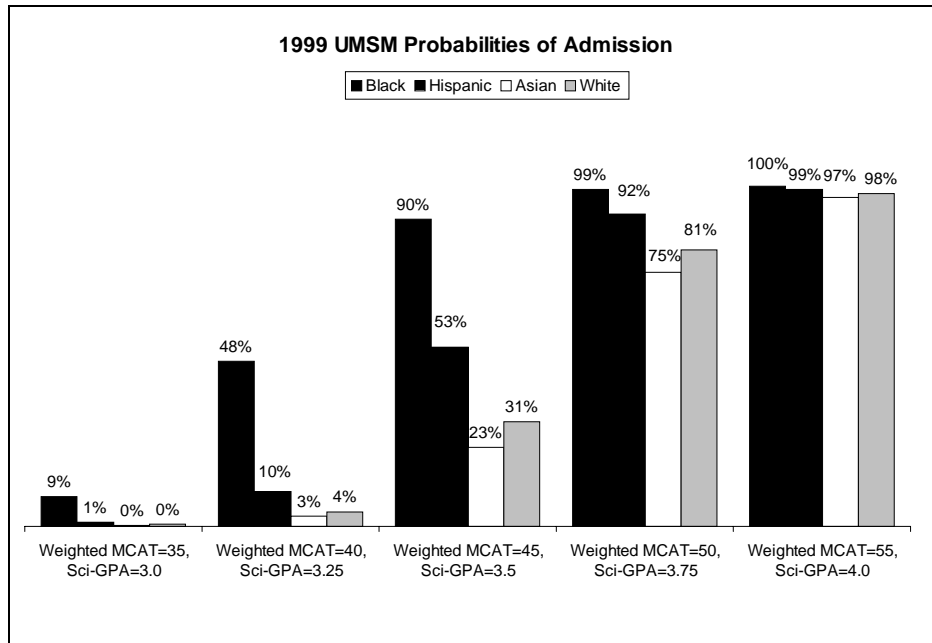
**1999.** Figure 7 shows the probabilities of admission for the four groups of in-state male applicants with no alumni relatives, based on the 1999 applicant pool. Probabilities of admission still favor black applicants over those of other groups, but black applicants are not given quite as much preference relative to other applicants as in 1996. Nevertheless, holding other variables constant, blacks still receive a very large degree of preference over other groups.

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<sup>32</sup> We calculated the national mean to be 37.8. The national writing sample average is a 6, which is the numerical transformation of the average letter grade of O. The national mean subscores for the verbal, physics, and biology subtests were 8.5, 8.6, and 8.7, respectively. Doubling the writing score and adding it to the remaining mean verbal, physics, and biology subscores gives us a mean weighted total of 37.8 for all test takers (those rejected as well as those accepted) in 1996.

For our studies on medical schools, we have created a total MCAT score, which is the sum of the subtest scores plus a converted score for the writing sample. For the latter, we took the assigned letter grade for an applicant's writing sample and converted it into a number. We assigned a 1 to the letter grade of J, a 2 to the letter grade of K, extending to an 11 for a T.

**Figure 7**



The gaps are large for those admitted with lower test scores and grades. A black in-state male applicant with no alumni parents and with a total MCAT score of 35 and a college GPA of 3.0 would have a 9 percent chance of admission, versus a 1 percent chance for a comparable Hispanic applicant, and no chance for a white or Asian. With an MCAT score of 40 and a GPA of 3.25, a black in-state male applicant with no alumni parents would have a 48 percent chance of admission. A comparable Hispanic applicant would have a 10 percent chance of admission, while an Asian and a white applicant would have a 3 and 4 percent chance, respectively.

There are also large gaps between blacks and the other groups for MCAT scores of 45 and GPAs of 3.5, even when holding constant sex, residency, and whether a student was related to a UMSM graduate. Ninety percent of black in-state male applicants with no parents graduating from UMSM would be admitted, as would a small majority (53 percent) of comparable Hispanics. A white with the same credentials and background would have a 31 percent chance of admission, while an Asian with the same academic and nonacademic considerations would have only a 23 percent chance of admission.

With weighted MCAT scores of 50 and science GPAs of 3.75, the differences in admission probabilities get smaller. With such scores and grades, practically all black in-state male applicants with no alumni parents would be admitted (99 percent), and so would 92 percent of Hispanics. Whites and Asians would be admitted at somewhat lower rates (81 percent for whites, 75 percent for Asians).

Whites, Hispanics, and Asians reach probabilities identical to the probabilities for black applicants at the very top. With MCAT scores of 55 and a GPA of 4.00, controlling for sex, residency, and whether a student was related to a UMSM graduate, the probability of admission for Hispanics, Asians, and whites—as well as blacks—is close to 100 percent (99 percent for Hispanics, 97 percent for Asians, 98 percent for whites, and 100 percent for blacks).

# Consequences of Racial and Ethnic Preferences at UMSM

## ***Early Help for URMs***

The analysis of MCAT and science GPAs of admittees by race and ethnicity shows that UMSM gives very large preferences in admission to black applicants, even to the point of accepting many at-risk applicants. Such enrollees enter medical school substantially underprepared compared to their white and Asian counterparts. Not surprisingly, UMSM has institutionalized a host of programs designed to prevent these at-risk students from dropping out. There is no indication, however, that UMSM draws a distinction between at-risk and non-at-risk applicants based on test scores and undergraduate grades, rather than race and ethnicity.

UMSM has developed an extensive network of services for URM enrollees to keep them in school. In its 1996 grant application for federal funding, UMSM defines its goal as “develop[ing] a comprehensive academic and non-academic support system for all disadvantaged medical students matriculating at UMSM.” UMSM goes on to explicitly target blacks for special academic intervention:

This will be achieved by enhancing and expanding current academic development efforts for freshman and sophomore students (i.e., first and second-year medical school students), with special emphasis on African American students. *The rationale for focusing on this group is that the basic science years represent the greatest hurdle to retention and progression of African-American students.*<sup>33</sup>

The problem of retention and progression of black students, however, is mostly one created by the medical school itself. Blacks are admitted with lower test scores and GPAs compared to non-URMs, and the evidence suggests that the medical school knows that they are less academically qualified. UMSM’s 1995 *Minority Achievement Report* claims:

The School of Medicine has continued to struggle with not having enough money available to make competitive financial aid packages available to the truly competitive [URM] applicant whose grades and test scores make them much sought after and easily wooed by private institutions. . . . *This forces the school to give more consideration to the less competitive students whose non-cognitive attributes become the criteria by which the school looks to give credibility to their application.*<sup>34</sup>

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<sup>33</sup> University of Maryland School of Medicine, Training Grant Application, Health Careers Opportunity Program (HCOP Grant Application), Grant No. MB02312-04, 1996, p. 18 (emphasis added).

<sup>34</sup> *Minority Achievement Report*, June 1995, pp. 95-96 (emphasis added).

Not surprisingly, the medical students are aware of the double standards for some racial and ethnic groups. In its 1996 *Minority Achievement Report*, UMSM notes, “[Minority students] received unlimited hours for tutoring and other support which is perceived by the non-minority student as ‘special treatment.’”<sup>35</sup> UMSM in the report says nothing about how it might fix this problem.

To keep URMs in school, UMSM offers many types of support to its targeted minorities. Outreach is extensive: Program and support service information and applications are sent to all targeted minority students admitted to UMSM.<sup>36</sup> The medical school also makes available a six-week “Pre-Matriculation Summer Program” for minority and other disadvantaged students.<sup>37</sup> This is a summer program that goes over critical portions of the mandatory first-year coursework, even before the in-coming students formally take these classes. The program also works on their reading and study skills, and participants receive counseling even before they start their first year. They may also obtain academic tutoring if they anticipate academic difficulty (although tutoring is available to others only when they actually face academic difficulty).<sup>38</sup>

During the academic year, UMSM also provides the following services to URMs:

- close monitoring by an academic committee;
- Step 1 preparation in the form of study-skills workshops related to Step 1 preparation and test taking, two practice testing sessions for Step 1, review materials for Step 1, and individual counseling;
- tutoring and practice exams for those receiving D’s or F’s in a course (who are required to take make-up exams or retake the course),
- minority faculty and student advising;
- Stanley Kaplan preparation courses to prepare for testing; and
- peer and group tutoring for specific courses, and other interventions.<sup>39</sup>

UMSM recognizes the need for academic monitoring and intervention from the very beginning of an at-risk student’s medical education. First, URM students are flagged by the monitoring committee based on MCAT scores. “The purpose of [UMSM’s academic monitoring] is to identify and contact first and second-year medical students whose test performances indicate a need for academic or non-academic support.”<sup>40</sup> Given the generally lower test scores of black students, they receive a disproportionate amount of academic monitoring. An average of 25 minority students are discussed at each academic monitoring meeting.<sup>41</sup>

UMSM also provides peer tutoring. In 1994, first-year students received 78 hours of peer tutoring. Minority freshmen received 56 hours, or 72 percent, of those hours.<sup>42</sup>

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<sup>35</sup> *Minority Achievement Report*, June 1996, p. 87.

<sup>36</sup> HCOP Grant Application, p. 33.

<sup>37</sup> *Ibid.*, p. 19.

<sup>38</sup> *Ibid.*, p. 34.

<sup>39</sup> The list is drawn from UMSN’s HCOP Grant Application, pp. 55-57. “Step 1” is explained at note 44, *infra*.

<sup>40</sup> *Ibid.*, p. 22.

<sup>41</sup> 1996 *Minority Achievement Report*, p. 89.

<sup>42</sup> Blacks and Hispanics made up roughly 17 percent of the 1994 freshman class, according to our calculations based on computer data obtained by CEO from UMSM.

Ninety-five percent of peer tutoring hours for second-year students were received by minority students. Academic counseling hours also went disproportionately towards minority students. Sixty-nine percent of academic counseling hours for first-year students went to minorities, as did 81 percent of hours for second-year students.

Even when hiring tutors, UMSM relies on double standards based on race and ethnicity. White and Asian medical students must have had A's in the courses they are to tutor, while minority tutors (blacks, Hispanics, and Native Americans) need only have B's, provided they have the requisite but undefined noncognitive factors:

The formal tutorial program employs upper-class students who made "A's" in the course they tutor. . . . Four African American students served as tutors during the past three years. Non-cognitive factors will be used to select minority tutors who earned "B's" in first year courses.<sup>43</sup>

### ***Analyzing Performance in Medical School***

Compared to undergraduate education, medical education in America is fairly standardized. It consists of four years, with basic medical science courses (microbiology, physiology, etc.) making up the first two years, while the third and fourth years involve greater clinical experience and exposure to a variety of specialties (surgery, obstetrics-gynecology, pediatrics, etc.).

UMSM refused to provide medical school grades and licensing examination scores to CEO. Instead, CEO obtained information on performance of medical school students for the 1996 entering class through documents and files unsealed in *Farmer v. Ramsay*. We have recalculated the statistical information used in the case to match the racial and ethnic group definitions used for this and other CEO reports.

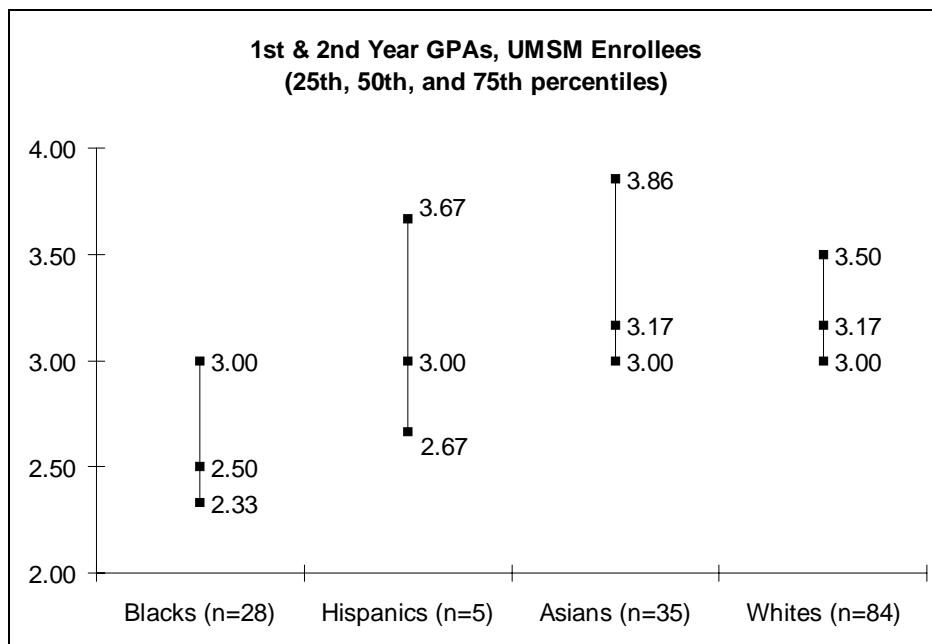
### ***Differences in Medical School GPAs the First Two Years***

Despite extensive intervention by UMSM, blacks had much lower grades on average during their first two years in medical school compared to Hispanics, Asians, and whites. These gaps are not surprising, given the much lower MCAT scores of blacks compared to Hispanics, Asians, and whites. Figure 8 shows the distribution of medical school GPAs for the first two years.

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<sup>43</sup> HCOP Grant Application, p. 39.

**Figure 8**



Black enrollees perform significantly worse than Hispanics, Asians, and whites in their first two years. The median GPA for blacks is 2.50 — at least half a grade-point lower compared to the others. It is 3.00 for Hispanics and 3.17 for Asians and whites.

Black GPAs for the first two years at the 75<sup>th</sup> percentile are the same as the Hispanic median and the Asian and white GPA at the 25<sup>th</sup> percentile. This means that 75 percent of blacks enrolled at UMSM had lower grades than half the Hispanic enrollees and 75 percent of Asians and whites. While Asian and white GPAs at the 25<sup>th</sup> percentile are 3.00, the black GPA at the 25<sup>th</sup> percentile is 2.33 — roughly a C-plus average.



## Differences in Medical School GPAs the Third and Fourth Years

Figure 9

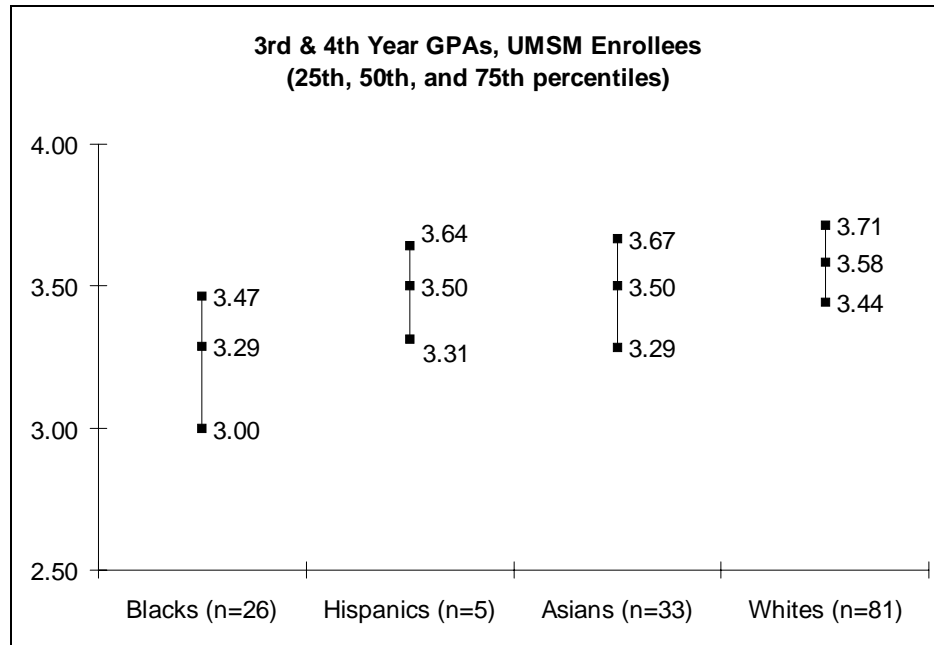


Figure 9 displays the medical school GPAs for the third and fourth years of medical school. GPAs are somewhat higher overall than the first two years for all four groups, but blacks still lag behind Hispanic, Asian, and white students. The median black GPA in the third and fourth years is 3.29, compared to 3.50 for Hispanics and Asians, and 3.58 for whites. The black median GPA for the third and fourth years is equal to or lower than the GPA for the bottom 25<sup>th</sup> percentile for Hispanics, Asians, and whites. This means that half the black students in their third and fourth years have lower GPAs as compared to 75 percent or more of Hispanics, Asians, and whites. Black GPAs at the 75<sup>th</sup> percentile are also lower than the average GPAs for Hispanics, Asians, and whites.

### Differences in Step 1 Scores

Disparities in medical school performance between groups are also reflected in their performance on Step 1 of the national licensing exam, the United States Medical Licensing Examination (USMLE).<sup>44</sup> These results are also in line with research showing

<sup>44</sup> The USMLE is the licensing exam of the National Board of Medical Examiners (NBME). It is generally required of every medical school student seeking to practice medicine in the United States. The USMLE consists of three separate examinations (Steps 1, 2, and 3). Step 1 is taken after the first two years of medical school, and a passing score is often required for a student to continue in medical school. Step 2 is taken during or after the fourth year. Step 3 is taken after graduation from medical school. The NBME establishes the minimum scores required to pass each part of the licensing exam. Most scores, according to the NBME, fall between 160 and 240. The passing score for Step 1 of the USMLE is 179, and the overall pass rate is typically 90 percent. See the USMLE website, <[www.usmle.org](http://www.usmle.org)>.

MCATs to be the best predictor of Step 1 scores.<sup>45</sup> Since UMSM admitted blacks with significantly lower MCAT scores as compared with the other groups, we would expect to find similar disparities in Step 1 scores.

All medical students at UMSM are required to pass Step 1 before continuing on with their medical education. A passing score in 1998, when the students who matriculated in 1996 took the test, was 179. This is the score at the 13<sup>th</sup> percentile of all Step 1 test takers in 1998—87 percent of those taking the test passed, fewer than 13 percent failed. The mean score for first-time test takers in 1998 was 210, and the standard deviation (the spread around the score that encompasses roughly 68 percent of all test takers) was 20 points.<sup>46</sup>

**Figure 10**

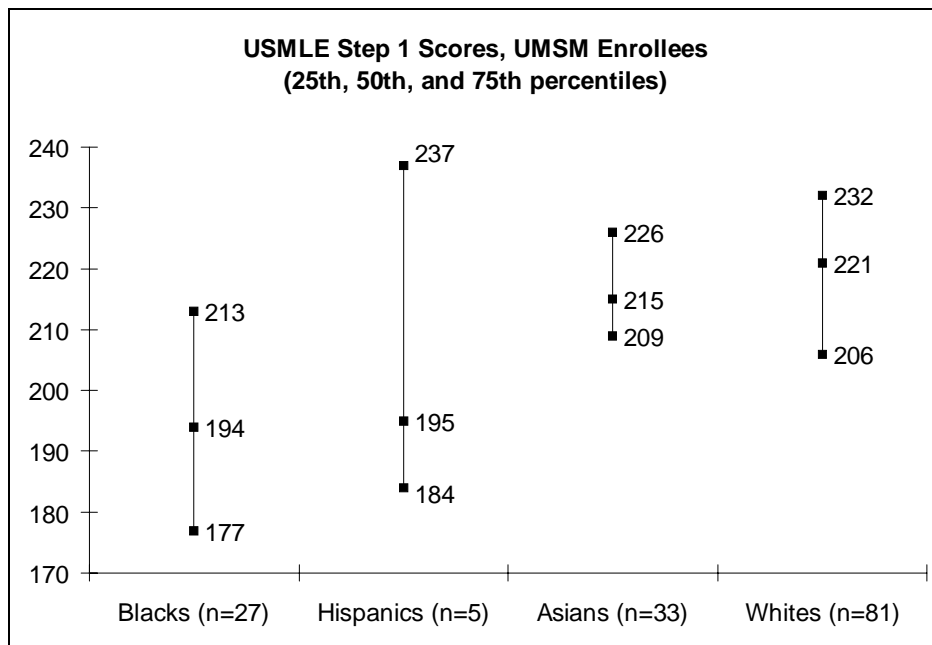


Figure 10 displays USMLE Step 1 scores at the 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> percentiles for blacks, Hispanics, Asians, and whites taking the test for the first time. The median Step 1 score for black students is roughly the same as that for Hispanics, but 11 points lower than the Asian median, and 17 points lower than the white median. The Step 1 score for blacks at the 75<sup>th</sup> percentile is lower than the median score for Asians and whites. It is only three points higher than the national average for first-time test takers, meaning that roughly 75 percent of black students at UMSM scored below the national average of all first-time test takers, not just those who passed, in 1998.

More significantly, more than a quarter of black students (7 out of 27) who took the test in 1998 did not pass Step 1 on the first try, no Asians failed, one Hispanic failed, and two whites (out of 81) failed. The Step 1 score for blacks at the 25<sup>th</sup> percentile was

<sup>45</sup> See, e.g., AAMC, *MCAT Interpretive Manual*, p. 15. Prediction in performance is further improved, according to the manual, when both types of preadmissions academic qualifications are considered jointly.

<sup>46</sup> In other words, roughly 68 percent of all test takers had scores falling between 190 and 230.

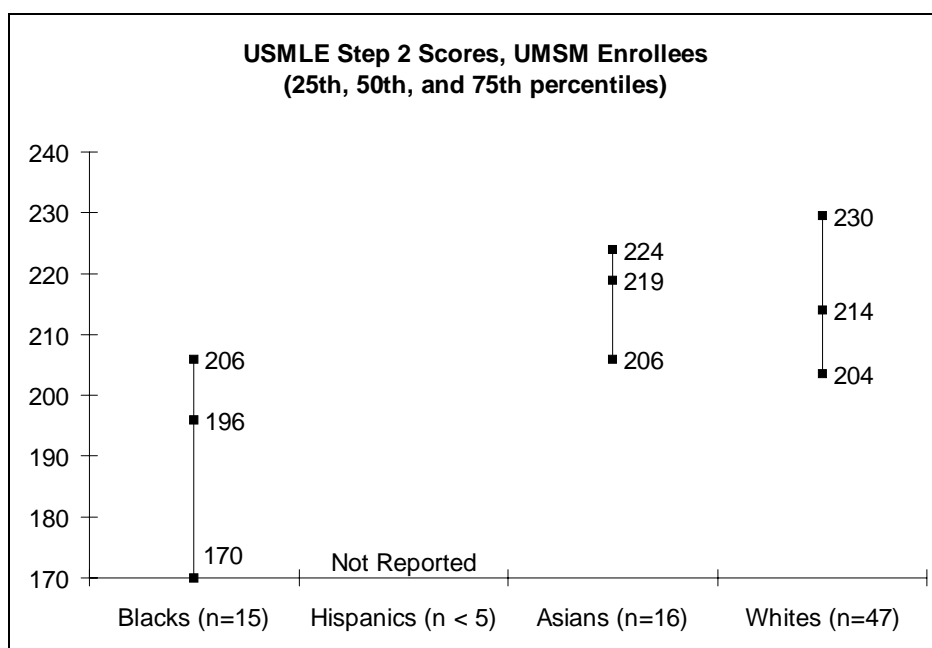
177—two points below the mandatory cut-off score. This puts them at the bottom 13 percent of all national test takers. Asian and white students at the 25<sup>th</sup> percentile did much better. The Asian score at the 25<sup>th</sup> percentile was 209 and the white score was 206, which were only one and four points, respectively, below the national mean. In other words, almost 75 percent of Asian and white UMSM students scored above the national average.

Nine individuals took the test a second time between 1998 and 2000. Seven passed. Two had to take Step 1 a third time; one had passed after this third try as of Summer 2000.

### **Differences in Step 2 Scores**

Eighty-four students took Step 2 of the USMLE by July 2000. It is not a requirement for graduation at UMSM, and so not all students took Step 2 before graduating. Figure 11 shows the Step 2 scores by racial and ethnic group. A passing score on Step 2 was 170 until May 1, 2000, when it was raised to 174.<sup>47</sup> Reporting of national percentiles was discontinued in 1999, so median national scores for Step 2 are not publicly available.

**Figure 11**



As displayed in Figure 11, most black students who took Step 2 had lower scores than most Asians and whites. The median Step 2 score for black students was 196—roughly 20 points lower than median Asian and white scores (219 and 214, respectively).

Black scores at the 75<sup>th</sup> percentile were roughly the same as Asian and white scores at the 25<sup>th</sup> percentile. That is, 75 percent of the black students taking Step 2 had lower scores than roughly 75 percent of Asian and white students.

<sup>47</sup> USMLE website, <www.usmle.org>, “Changes in Minimum Passing Score.”

About a quarter of black students (4 out of 15) taking Step 2 did not pass; no whites or Asians failed. The 25<sup>th</sup> percentile for blacks was 170, which was the passing score before May 2000, when it was raised to 174.

### ***Relationship between MCATs and Subsequent Performance in Medical School***

Disparities in medical school performance at UMSM could have been predicted by the gaps in MCAT scores and science GPAs. Research has shown academic qualifications to be very important in predicting success in medical school. MCAT scores and undergraduate science grades have been found to be the best predictors of medical school performance and passing Step 1 of the USMLE.

The AAMC has been conducting an ongoing study of the validity of the MCATs. In its *Interpretive Manual*, the AAMC finds the MCATs more valid than other factors in predicting subsequent performance in medical school.<sup>48</sup> The AAMC reports that an individual's MCAT scores have a 0.67 correlation with first-year medical school grades, a 0.64 correlation with first- and second-year medical school grades, and a 0.72 correlation with scores on Step 1 of the USMLE. In contrast, an individual's college science GPA has a 0.54 correlation with first-year medical school grades, a 0.58 correlation with first- and second-year grades, and a 0.48 correlation with USMLE Step 1 scores.

Other research has also found MCAT scores, more than undergraduate GPAs and any nonacademic traits, to be the best predictor of medical school grades and subsequent test scores on the medical licensing exams. Wiley and Koenig found MCAT scores to be extremely accurate in predicting first- and second-year medical school grades and USMLE Step 1 scores. They found the correlation between MCAT scores and USMLE Step 1 scores to be 0.72, and 0.64 for first- and second-year medical school grades, respectively.<sup>49</sup> Case, Swanson, Ripkey, Bowles, and Melnick found a statistically significant relationship between MCAT scores and subsequent performance on Step 2 of the USMLE, as well as a correlation between MCAT scores and medical students' performance in clinical clerkships.<sup>50</sup> In another study, nearly half of all medical students with MCAT scores in the bottom quartile of all test takers (a mean score lower than an 8) fail Step 1 on their first try.<sup>51</sup> Other researchers have found that matriculants with low

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<sup>48</sup> Association of American Medical Colleges, *MCAT Interpretive Manual: A Guide for Understanding and Using MCAT Scores in Admissions Decisions* (Washington, DC: Association of American Medical Colleges, 1998): 15-16.

<sup>49</sup> See J.A. Koenig and A. Wiley, "The Validity of the Medical College Admission Test for Predicting Performance in the First Two Years of Medical School," *Academic Medicine*, 71, #10 (October 1996 Supplement): S83-S85.

<sup>50</sup> S.M. Case, D. B. Swanson, D.R. Ripkey, L. T. Bowles, and D. E. Melnick, "Performance of the Class of 1994 in the New Era of USMLE," *Academic Medicine*, 71, #10 (October 1996 Supplement): S91-S93. See also K. L. Huff, J.A. Koenig, M. M. Treptau, and S. G. Sireci, "Validity of MCAT Scores for Predicting Clerkship Performance of Medical Students Grouped by Sex and Ethnicity," *Academic Medicine*, 74, #10 (October 1999 Supplement): S41-S44, where a correlation between MCATs and third-year clerkship grades was found.

<sup>51</sup> Roughly 90 percent of all test takers pass Step 1 at any given time. A. Tekian, R. Mrtek, P. Syftestad, R. Foley, and L. J. Sandlow, "Baseline Longitudinal Data of Undergraduate Medical Students at Risk," *Academic Medicine*, 71, #10 (October 1996 Supplement): S86-S90; J.A. Koenig, W. Li, and R. Haynes, "Estimation of the Validity of the 1991 MCAT for Predicting Medical School Grades, NBME Performance,

MCAT scores—that is, students with mean MCAT scores below 7.0—were at risk for academic failure, meaning failure to complete medical school.<sup>52</sup>

We performed similar calculations for UMSM enrollees.<sup>53</sup> The correlation between MCAT scores and first- and second-year grade point average is 0.66, while the correlation between MCAT scores and third- and fourth-year grades is much lower (0.28).

MCATs and USMLE scores are also highly correlated. The correlation between MCAT scores and USMLE Step 1 scores on an individual's first attempt at the test is 0.70. The correlation between MCAT scores and their USMLE Step 2 scores is 0.65. All correlations were statistically significant at the 0.0001 level of significance except for the correlation between MCATs and the GPA for third- and fourth-year classes, which was statistically significant at the 0.001 level.

In terms of a white-black test score gap and possible racial bias regarding the MCATs, research shows little or no racial or ethnic bias associated with the MCATs in its prediction of subsequent performance. One study found that MCAT scores predicted medical school performance equally well for all racial and ethnic groups.<sup>54</sup> Another study found that controlling for MCAT scores and college grades dramatically reduced the differences between racial and ethnic groups in passing Step 1 of the USMLE. With the same MCAT scores and college grades, Hispanic and black men performed about as well as white men on Step 1. The same was the case for black women as compared with white women with the same academic credentials, and Hispanic women performed only slightly worse.<sup>55</sup>

We performed similar analyses on UMSM enrollees by racial and ethnic groups. There is a statistically significant difference in means for the first- and second-year GPAs among racial and ethnic groups, with no controls for MCATs and undergraduate science GPAs. When mean differences in the first- and second-year GPAs are controlled for MCAT scores and college grades, however, there is no performance gap between members of different racial and ethnic groups. The relationship between race/ethnicity and performance in the first two years of medical school vanishes.

The same is the case regarding Step 1 scores. There is a statistically significant difference in mean Step 1 scores between groups. The relationship between race/ethnicity and differences in mean Step 1 scores then vanishes, however, when one controls for

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and Academic Difficulty,” paper prepared for the MCAT Evaluation Panel Meeting, December 1987, available at <[www.aamc.org/stuapps/admiss/mcat/koeni001.htm](http://www.aamc.org/stuapps/admiss/mcat/koeni001.htm)>.

<sup>52</sup> K. L. Huff and D. Fang, “When Are Students Most at Risk of Encountering Academic Difficulty? A Study of the 1992 Matriculants to U.S. Medical Schools,” *Academic Medicine*, 74, #4 (April 1999): 454-460.

<sup>53</sup> These correlations, like those reported in the *MCAT Interpretive Manual*, are corrected for restriction in range. In other words, because the range of MCAT scores among enrollees is much more limited than among all test takers, they should be statistically adjusted to reflect this restriction. See Jacob Cohen and Patricia Cohen, *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (Hillsdale, NJ: Lawrence Erlbaum, 1975), and AAMC, *MCAT Interpretive Manual*, p. 15.

<sup>54</sup> J.A. Koenig, S.G. Sireci, and A. Wiely, “Evaluating the Predictive Validity of MCAT Scores across Diverse Applicant Groups,” *Academic Medicine*, 73, #10 (October 1998): 1095-1106.

<sup>55</sup> B. Dawson, C. K. Iwamoto, L. P. Ross, R. J. Nungester, D. B. Swanson, and R. L. Volte, “Performance on the National Board of Medical Examiners Part I Examination by Men and Women of Different Race and Ethnicity,” *Journal of the American Medical Association*, 272, #9 (September 7, 1994): 674-679.

MCATs and science GPAs. This means that overall white-black and Asian-black gaps in subsequent medical school performance are a function of prior academic qualifications. Having admitted and enrolled more blacks with lesser qualifications, it follows that these students would perform worse later on.

### ***Differences in Graduation Rates***

Black students also graduate at a lower rate than white counterparts, although they graduate at a higher rate than Asian students. Below are the four-year graduation rates for black, Hispanic, Asian, and white students entering in Fall 1996.

- 68 percent of blacks
- 63 percent of Asians
- Hispanics not reported (fewer than 5)
- 82 percent of whites

Sixty-eight percent of blacks entering UMSM in Fall 1996 graduated in four years. The black graduation rate is lower than the white (68 percent compared to 82 percent). It is five points higher than the Asian rate, despite black students having lower MCAT scores, undergraduate science grades, medical school grades, and USMLE test scores.

The reasons for not graduating vary. Further analysis of those who did not graduate sheds some light on graduation rates. Of the blacks who did not graduate, all had first- and second-year GPAs of 2.58 or lower. The median first- and second-year GPA for nongraduating black students was 2.17. For those who had third- and fourth-year grades but did not graduate, the median GPA was 2.00, and the third- and fourth-year GPA was 3.00 at the 75<sup>th</sup> percentile. As for Step 1 scores, more than half of nongraduating blacks did not pass the exam at the first attempt. The median Step 1 score for black nongraduates was 173, which is lower than the required passing score of 179 for Step 1.

In contrast, nongraduating whites and Asians are a split group. Roughly half the nongraduating group of Asians and whites had relatively poor grades and Step 1 scores as compared to graduating Asians and whites, but the other half, and definitely the top quarter, had notably high grades and Step 1 scores. Among nongraduating whites and Asians, the median first- and second-year GPAs for Asians and for whites was 3.00. Twenty-five percent of nongraduating Asians and of nongraduating whites had GPAs around 2.50. Twenty-five percent of whites, however, had a first- and second-year GPA of 3.5 or higher, and 25 percent of Asians had a GPA of 4.0 or higher.

Of nongraduating Asians and whites that had third- and fourth-year grades, the median was 2.12 for Asians, indicating academic difficulty, and 3.38 for whites, which shows less academic difficulty. At the 75<sup>th</sup> percentile, however, the GPA for the third and fourth years was 3.67 for Asians and 3.50 for whites, suggesting that this group in the top 25 percent of nongraduating Asians and whites was not graduating for reasons other than academic difficulty.

The nongraduating whites and Asians also split into two groups on Step 1. The median score for nongraduates was 213 for Asians and 232 for whites. The bottom 25<sup>th</sup> percentile was 204 for Asians and 194 for whites. These are still higher than the 75<sup>th</sup>



percentile for black nongraduates (193). The top quarter of nongraduates, moreover, had high Step 1 scores (224 for Asians, and 243 for whites).

The statistics on nongraduates suggests that anywhere between a quarter and a half of Asian and white students went elsewhere, were in some joint M.D.-Ph.D. program, or did not graduate for reasons other than academic difficulty. In contrast, there is ample evidence that, for black enrollees, poor academic performance in medical school is related to nongraduation in the vast majority of cases.

UMSM implies in various documents that poor academic performance is related to low MCATs, and black students, because of their lower MCATs, are more at risk. It is apparent that only substantial intervention by UMSM keeps these academically marginal students on track for graduation.

### ***Other Consequences of Racial and Ethnic Preferences***

UMSM's racial and ethnic preference program not only admits blacks who are at best marginally qualified, it discriminates against better qualified whites, Hispanics, and Asians. This incurs substantial costs to individual applicants denied admission to UMSM on account of the color of their skin.

The state of Maryland has only one publicly funded medical school. Options for in-state rejectees consist of private medical schools, out-of-state medical schools, or foreign medical schools. In the first case, tuition for state medical schools is lower than that for private medical schools. As for applying as a nonresident to another state's medical school, the applicant is at a substantial admissions disadvantage because of his nonresident status, and must also pay the higher nonresident tuition (if he or she succeeds in getting in). And, as for applying to foreign medical schools, the applicant must shoulder substantial costs of tuition and travel, plus the added social burden of living in a foreign country. Moreover, foreign medical school graduates are more likely to fail the U.S. licensing exams.<sup>56</sup>

Consider also the societal costs incurred by such a program of racial preferences. How much does it cost the taxpayers to train at-risk physicians? How much do additional tutorial and supplemental programs cost taxpayers? Do racial preference programs create resentment and reinforce negative stereotypes? Do they lower standards for physician training? And, ultimately, how do such students perform as doctors?

The long-range impact of racial and ethnic preferences in medical school admissions is not known. The medical establishment claims that racial and ethnic preferences are needed to increase the number of black, Hispanic, and Native American doctors, which in turn improves medical care for patients of the same race. But research in this area is meager, and a review of the literature on minority health-care and physicians' race/ethnicity yields contradictory findings. There is also little research on preferred enrollees' performance in medical school, performance on licensing exams, and subsequent physician performance, as measured by various factors, including ratings by fellow physicians.<sup>57</sup>

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<sup>56</sup> *Barron's Guide to Medical and Dental Schools* (Hauppague, NY: Barron's Educational Series, Inc., 1997).

<sup>57</sup> See Satel, *PC M.D.*, for a review of the research. Satel notes that time spent between physician and patient is probably the most important factor in the doctor-patient relationship, not the race of the physician.

In sum, it is quite clear that UMSM goes to great lengths to admit less qualified African Americans at the expense of other, better qualified applicants. It is also clear that, having admitted students who are academically at risk, the medical school must then expend a disproportionate amount of time, energy, and resources to keep these underqualified, at-risk students in school. What UMSM has done is more than a recruitment and outreach campaign. This is a systematic policy to admit, enroll, and graduate sufficient numbers of some students because of their skin color, at the expense of other, more academically qualified applicants who happen to lack that skin color.

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Most recently, a study found being a minority to be a risk factor in predicting who would be a problem resident, but here, too, insufficient medical knowledge, poor clinical judgment, and insufficient use of time were the most frequently reported difficulties. (Medical knowledge and clinical judgment are most closely related to test scores, as previously discussed.) See D. C. Yao and S. M. Wright, "National Survey of Internal Medicine Residency Programs Directors Regarding Problem Residents," *Journal of the American Medical Association*, Sept. 6, 2000, available at <[www.jama-ama-assn.org](http://www.jama-ama-assn.org)>.



# Appendix

## *Multiple Logistic Regression Equations, 1996-1999*

**1996**

<i>Variable</i>	<i>Unstan. Reg. Coef.</i>	<i>Odds Ratios</i>
Black	4.1194*	61.5197*
Hispanic	.1778	1.1946
Asian	-.2619	.7696
Female	.6169**	1.8532**
In-State Resident	2.9702*	19.4960*
Alumni Parent	4.2913*	73.0599*
Weighted MCAT Score	.2054*	1.2280*
Science GPA	3.8902*	48.9227*
Constant	-26.5243*	

\*Statistically significant at  $p \leq .0001$

\*\*Statistically significant at  $p \leq .01$

### **1997**

<i>Variable</i>	<i>Unstan. Reg. Coef.</i>	<i>Odds Ratios</i>
Black	3.5817*	35.9345*
Hispanic	-.5669	.5673
Asian	-.9706**	.3789**
Female	.4122 <sup>#</sup>	1.5101 <sup>#</sup>
In-State Resident	3.2172*	24.9592*
Alumni Parent	5.2274*	186.3135*
Weighted MCAT Score	.2289*	1.2573*
Science GPA	4.0104*	55.1717*
Constant	-28.0143*	

\*Statistically significant at  $p \leq .0001$

\*\* Statistically significant at  $p \leq .001$

<sup>#</sup> Statistically significant at  $p \leq .005$

**1998**

<i>Variable</i>	<i>Unstan. Reg. Coef.</i>	<i>Odds Ratios</i>
Black	3.7071*	40.7375*
Hispanic	.6566	1.9282
Asian	-.4774 <sup>##</sup>	.6204 <sup>##</sup>
Female	.5447 <sup>##</sup>	1.7241 <sup>##</sup>
In-State Resident	2.9494*	19.0945*
Alumni Parent	3.3932*	29.7615*
Weighted MCAT Score	.2289*	1.2572*
Science GPA	3.8705*	47.9654*
Constant	-27.5471*	

\*Statistically significant at  $p \leq .0001$

<sup>##</sup>Statistically significant at  $p \leq .05$

**1999**

<i>Variable</i>	<i>Unstan. Reg. Coef.</i>	<i>Odds Ratios</i>
Black	3.0270*	20.6343*
Hispanic	.9223	2.5149
Asian	-.3852	.6803
Female	.9603*	2.6126*
In-State Resident	2.8980*	18.1378*
Alumni Parent	2.8724*	17.6791*
Weighted MCAT Score	.2564*	1.2922*
Science GPAs	3.9854*	53.8085*
Constant	-29.1983	

\*Statistically significant at  $p \leq .0001$



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Linda Chavez, President