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# Overcoming THE Odds



**Raising Academically Successful  
African American Young Women**

**FREEMAN A. HRABOWSKI, KENNETH I. MATON,  
MONICA L. GREENE & GEOFFREY L. GREIF**

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## P R E F A C E

This book represents the second part of a study that began in 1995 as the result of the success of the Meyerhoff Scholars Program at the University of Maryland, Baltimore County (UMBC). This exciting program, created in 1988, was designed to increase the numbers of minorities, especially African Americans, who become research scientists and engineers. As a result of the program's success, the university has received numerous inquiries from school systems and parents about the backgrounds of these extraordinary students. In fact, over the past ten years, increasing numbers of parents of young children and adolescents have asked the program's staff for advice on how to improve their children's academic performance, in general, and in math and science, in particular. The recurring question was, "How did the Meyerhoff Scholars become such high-achieving, committed students in science and engineering?" Clearly, the best people to answer this question were the students themselves and their parents.

In 1989, the first year of the Meyerhoff Program, only African American young men were selected to participate, reflecting the particular interest expressed by Robert and Jane Meyerhoff, the program's cofounders and most substantial private donors. Their interest focused on the plight of young Black men in American society. Beginning with the second year of the program, young African American women started participating. (While the program continues to be approximately 65 percent African American, 35 percent of the students are from other ethnic and racial backgrounds, reflecting additional selection criteria that focus on talented students in the sciences who have an interest in working with minorities underrepresented in these fields.)

Each year, between 40 and 60 Meyerhoff freshmen are competitively selected from across the country from over 1400 nominations and applications. Preference is given to students with strong grades and SAT scores, who have taken advanced placement math and science courses, have research experience, and have strong references from science and math instructors. Other criteria include a commitment to remain in the sciences and a desire to participate in community service. Admitted students benefit from various kinds of support, ranging from scholarships and academic and personal advising to intensive mentoring by faculty and professional scientists and opportunities for substantive research.



In our first book about the Meyerhoff students, *Beating the Odds: Raising Academically Successful African American Males*,<sup>1</sup> we chose to write about young Black men because of the major challenges this group faces in our society (e.g., in many states, there are more young African American men in prison than in college) and because they tend to be on the lower rungs of the K-12 academic ladder nationally. Since the publication of *Beating the Odds*, we have had the opportunity to discuss the book's findings throughout the United States with numerous state and local school boards, professional associations, and a variety of other educational and community groups. The book has received overwhelmingly positive responses not only from policy-makers and teachers but also, not unexpectedly, from parents of both minority and other children. Most important, people have found the book responsive to their search for answers to questions about academic achievement, especially concerning young Black men. At the same time, we have received numerous questions about our research and plans for a second book focusing on African American girls and young women, recognizing that there are both similarities and differences among the circumstances of young Black men and women, and that the nation faces significant challenges regarding the academic performance of African American girls and the status of African American women in particular, and of American girls and young women in general.

*Overcoming the Odds* is especially timely from the standpoints of (1) current research on girls and young women in America, (2) the nation's continuing struggle with achieving diversity in higher education (e.g., race-sensitive admissions policies) and in the work force, and (3) the nation's commitment to eliminating the gap in health status between minorities and other groups of Americans and the related shortage of minority biomedical scientists and health professionals. The book complements important perspectives of recent scholars, including those associated with the American Psychological Association's 1999 Task Force on Adolescent Girls,<sup>2</sup> who focus on a strengths-based model in examining how girls are raised by their parents. Regarding minority achievement in higher education—our primary focus—it is especially important to identify and replicate those parenting and educational practices and strategies that have been most effective in producing success. In this area, former university presidents Derek Bok and William Bowen, in their book *The Shape of the River*,<sup>3</sup> provide a wealth of information on the successful performance of African American undergraduate students, both in a sample of selective universities across America and

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in their subsequent careers. In addition, they highlight the value of a diverse student body in preparing students to live and work with people from other races. Finally, *Overcoming the Odds* also suggests how we can produce more minority scientists, which is one of the major challenges experts contend we must address in order to focus more effectively on the biomedical problems of minorities in America.

From their first day in the program, the female Meyerhoff students appeared far more assertive and comfortable with their academic success in science than their male counterparts (though significantly fewer demonstrated interest in engineering or computer science). As we interacted with these “daughters” and their families, we began thinking about the roles that the students’ parents played in instilling such confidence and the sense of security they exhibited. In fact, over the past ten years, we have been astonished by the impressive abilities of these students to lead balanced lives. Over this period, we have surveyed hundreds of young women in the program through personal interviews and questionnaires. The results of these efforts helped to inform the process for developing interview and survey questions for our research in this book. Furthermore, our analysis of the data collected over the years through both the surveys and our personal experiences with Meyerhoff students and their families have helped us to understand more fully the information we obtained in the current study. On the one hand, the young women have focused heavily on their laboratory research and course obligations, also serving as role models and tutors to countless girls and boys in the state of Maryland and beyond; on the other hand, they have successfully grappled with all of the pressures, issues, and questions associated with moving into womanhood—from developing self-esteem to making choices related to their futures as professionals, wives, mothers, and daughters.

Because of its focus on young women, this book presented some very different challenges from those we faced in writing the book about young men. We found through our interviews with the young women, as has generally been the case in the program, that they were more forthcoming than their male counterparts in responding in an in-depth manner to questions regarding their sources of motivation, their backgrounds, and even their feelings about being high academic achievers. As a result, we had to cull from literally thousands of pages of interviews those comments and insights that would best reflect the thinking of the variety of young women and families

we studied. Our intent was to provide as much information as possible about the success of these young women, including the problems and obstacles they faced at different stages in their lives and the strategies they used to overcome them.

We spent considerable time thinking about the best way to give readers a sense of the differences and similarities among families, parenting strategies, and the perspectives of the students and parents we studied, because they come from a wide range of educational, socioeconomic, and family backgrounds. In addition to focusing on the more traditional two-parent, middle-class homes where at least one parent attended college, we worked to ensure that we had substantial representation of single-parent families or families where neither parent attended college.

Regardless of the educational backgrounds of these parents, we found in our research (for both books) that many of the parents became discouraged from time to time when their children did not meet their expectations or think and act as the parents wished. Despite the parents' efforts to instill certain values in their daughters, it was very clear that some of the daughters in our study had different opinions and approached problems differently from their parents—simply because they were growing up at a different time and facing different kinds of challenges. From what we observed, it is not surprising that the parents of many young girls are searching for answers to questions not simply about how to help their daughters with their academic work, but also about how to support them emotionally as they grow and develop into womanhood. African American families, in particular, will find that the book provides superb examples of successful practices and insightful comments from the young women, their parents, and others who played a significant role in the young women's lives.

The book also offers many inspiring stories about the unusual strength and determination of these young women to overcome the odds—in some cases even after they have come to college. One young woman, for example, was diagnosed with non-Hodgkin's lymphoma during her sophomore year and did her homework from her hospital bed and faxed it back to her professors. She depended on friends and classmates to take notes for her but was determined that her disease would not deter her from her goal of earning a degree in chemical engineering. "I told myself I didn't have time to be sick," she said. She endured three surgeries, weeks of chemotherapy, and the loss of her hair but remained in school and even enrolled in a summer session. Her grades remained high, and she managed even to continue her

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research internship at the National Institutes of Health, scheduling her medical appointments around her work. Today, her sights are set on earning an M.D./Ph.D. in biomedical engineering.

In another case, two Meyerhoff women—sisters four years apart—were inspired in different ways by their mother’s uncommon academic perseverance. The mother, newly married and pregnant in 1973, had left Drexel University with a year of study to go. More than twenty-five years later, in spring 1999, and nearly 46 years old, she earned a degree from Wellesley College, completing a program for women of nontraditional ages. Inspired by their mother’s persistence, both daughters—one majoring in math, the other in biochemistry and molecular biology—graduated a few days later in spring 1999, each having taken a different path. The younger daughter consistently carried heavy course loads in order to graduate early, while the older daughter, like her mother, had left school early but decided to return and earn her degree. Adding to the mother’s pride and excitement about the sisters’ simultaneous graduations was the element of total surprise—she knew nothing about her older daughter’s return to school and graduation. The daughter simply said, “Mom knew firsthand what it meant to leave school, but her one lesson to me was to do what makes me happy. She always said, ‘Never stop dreaming.’”

We are hopeful that *Overcoming the Odds* can serve as a valuable source of information about what parents, schools, and even universities can do to produce African American female scientists and engineers. We hope also that the book will add substantially to the growing body of research and dialogue on critical issues involving education and diversity in America—issues certain to have a profound influence on the nation’s future.

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## ACKNOWLEDGMENTS

This book is the result of the collaboration of four authors, including a university president, a professor of psychology, a faculty research associate in psychology, and a professor of social work. All four have focused considerable attention on issues related to minorities in American society. One of the four authors is the father of daughters (two are fathers of sons), two are African American, and one is a woman.

### *Freeman A. Hrabowski*

Since the first group of young women entered the Meyerhoff Program in 1990, I have often thought of and referred to these students as “my daughters.” For the past ten years, they have taught me a great deal about inner strength, persistence, and the importance of believing in oneself. I have been very impressed by the parents of these young women, who have devoted their lives to teaching their daughters how to succeed in a society that does not necessarily expect them to succeed and achieve at high levels. As I listened to parents and educators around the country responding to our first book on young Black men, it became increasingly clear that people were anxiously waiting to learn about the rearing of successful young African American girls and about their families. I want to thank the young women and their families for allowing us to study their lives and their family relationships over an extended period of time.

It has been a gratifying experience to collaborate with my coauthors as we have talked and worked together on this project over the past three years. I especially want to thank Mr. and Mrs. Robert Meyerhoff, who have been far more than benefactors of the Meyerhoff Program. They have been an inspiration to my colleagues, students, and me as they have given generously of themselves through their encouragement, their interest in the issues, and their enthusiasm about the students’ success. It is hard to describe the special effect of their personal attention to the Meyerhoff Scholars. Suffice it to say that they have been instrumental in helping us to show these young people how special they are.

I also am grateful to the staff of the Meyerhoff Program, all of whom work very hard to ensure the success of these students. Special commendations go to Earnestine Baker, director of the program, and LaMont Toliver, associ-

ate director, who have been invaluable in the interviewing and general research for this book. They and the other Meyerhoff staff members are the professionals who work most closely with, and inspire, these young women on a day-to-day basis. I also want to thank Doug Pear, my associate, for his special commitment to the Meyerhoff Program, especially involving his invaluable editorial comments on drafts of this book. Doug was particularly invaluable in helping us to express ourselves clearly and precisely, understanding the wide-ranging backgrounds and perspectives of potential readers. Also, I am grateful to Linda Gorham, a doctoral student in psychology at my university, who provided both invaluable assistance with the literature search and insightful perspectives gained from having reared an African American girl who is now a successful professional. My colleagues among the faculty, not only in science and engineering but across disciplines, and staff in general at UMBC, have contributed substantially to the Meyerhoff Program and can rightfully take ownership of its successes and the national visibility it has received. My coauthors and I also are grateful to President's Office staff, including Karen Wensch for her general support and encouragement, Kathleen Raab for providing outstanding technical support on numerous drafts, and Susan Bosley for her assistance in transcribing many pages of interview data. I will always be grateful to my wife, Jackie, for continuing to believe in me, and to my son, Eric, through whose eyes I have come to see and understand so much more about young people.

Finally, we dedicate this book to all of the young women in the Meyerhoff Program and their families, and to families like them throughout the nation who are striving every day to support their daughters.

*Kenneth I. Maton*

It has been a special privilege to read the interview transcripts which formed the basis of the current book. The young women and their parents are impressive in so many ways—their strength of character, resilience, integrity, and persistence have been a source of great delight, hope, and inspiration to me. And, as I noted in the preface to our first book, *Beating the Odds*, I see a lot of myself in the Meyerhoff students—especially their educational focus growing up. Although my ethnic heritage, as a Jewish white male, is quite different in many ways from theirs, I feel a kinship concerning a shared personal and family focus on the importance of education, and the overarching reality that education's benefits can never be taken away, no matter how hostile the environment. I am grateful for the willingness of the daughters and

### *Acknowledgments*

parents to contribute to this endeavor, and hope the book begins to capture and communicate the importance and specialness of what their lives and dreams—to date—have accomplished.

An important source of inspiration for this work has been my family. My two sons, Nathan and Tyler, provide opportunities every day to apply the helpful parenting practices and approaches delineated in this book. My wife, Mary Kay, is a true friend, and has unfailingly provided the extra support and space needed when chapter deadlines loomed near, and time was precious. My sister, Nori, and my parents, Edith and Oscar Lang, and Norman Maton, are my “Meyerhoff” Family—growing up, and to this day, I could not have had more support and love than they provided.

A large and diverse team of colleagues and students has contributed importantly to the development of all aspects of the current book. We fully appreciate the commitment, enthusiasm, and insights provided by Hibist Astatke, Anne Brodsky, Linda Gorham, Troy Green, Colleen Loomis, Susan Lorentz, Dewi Smith, Wendy Stevenson, and Elise Vestal.

#### *Monica L. Greene*

When I was a graduate student, I spent several years assisting in all aspects of research involving the Meyerhoff Program. Through my interactions with such an impressive group of students, I learned of their successes, their challenges, and the multiple resources on which they relied for support. As I fervently completed my doctoral dissertation on the race-related experiences of the Meyerhoff students, I believed it was the end of a very meaningful experience. Thus, less than two years later, when my colleagues invited me to contribute to this exciting project, I was not only surprised but was also quite honored and intrigued. For me, this book represented an exciting opportunity to integrate two subject areas with which I could readily identify, the Meyerhoff Program and the developmental process of successful Black women. I am grateful to my coauthors for a truly enjoyable collaborative process.

I thank the Meyerhoff Program staff for their continuous assistance and support, and especially Earnestine Baker, director, and LaMont Toliver, associate director, for their critical and generous contributions to this endeavor. I am especially grateful to graduate student Elise Vestal for her invaluable assistance at all levels of this process. I express my deep appreciation to Anne Brodsky, Colleen Loomis, Hibist Astatke, Dewi Smith, Wendy Stevenson, Susan Lorentz, and Juanita Tennyson for their valuable insights and contri-



butions as members of the research and coding teams. My thanks go to Linda Gorham and Christina Wilmer for their assistance in the coordination of research literature. I also acknowledge Tracey Drummond, Mary Johnston, Sylvia Mallonee, Terri Harold, Alice Graham, and Heather Dimmig for their critical help in transcribing thousands of pages of interview data.

Finally, I give thanks to my supportive network of family and close friends. Special thanks go to my husband, André Smalls, for his abiding love, support, and faith in my abilities. I am thankful to my parents, Marion and David E. Greene, Jr., and my brother, David K. Greene, for instilling in me the importance of faith, education, and family, and for raising me to become a successful African American woman.

*Geoffrey L. Greif*

My first exposure to the Meyerhoff Program came in 1995, when work began on *Beating the Odds*. Over the years, I have come to appreciate, through my eyes as a researcher, social worker, and parent, how remarkable the Meyerhoff students are. They are remarkable not only for their academic achievements but also for what many of them have overcome in order to reach their potential. They have not done it alone by any measure. Parents, other family members, teachers, mentors, religious leaders, and peers have all played a part. As I reflect on my parenting of two daughters who are about the same ages as the young women who are the focus of this book, I wonder what kind of a father I have been. On the basis of their skin color, many more doors are immediately open to my daughters. But I wonder if I have given them a sufficient sense of community and heritage. I learned from the parents in this book how they encouraged their children and wonder if I have encouraged mine while also supporting them unconditionally. And I wonder if, as a father, I have taught them enough about the world.

I realize that somewhere along the line, most parents wonder about these things no matter how accomplished, loving, and lovable their children are. Parenting is an imperfect endeavor—there are no perfect children just as there are no perfect parents. Readers of this book should not feel distressed if their families have not always taken the steps that these families have taken. No single family in this book has followed the steps that are described cumulatively by all the families. Parenting is a dynamic process that calls for different responses throughout life. What is appropriate at one point is rarely appropriate at another. It is the wanting to be a good parent that is key. I thank the Meyerhoff families and my daughters for helping me to learn this important lesson.

## ***Overcoming the Odds***

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## Successful African American Young Women and Their Families

*“Your uncle’s hooked on crack” says my mother as we park in front of his house. As I walk towards my house, I look to my right and see a couple of drug addicts sitting on what used to be my aunt’s favorite couch and enjoying the comforts of her once humble abode. On the steps, there sits a high-school dropout, no older than the age of 17, counting the money he earned from selling drugs. At the corner, the mother of a local drug kingpin took on his responsibility after he was killed in cold blood. . . .*

*My parents always stressed the importance of a good education and taught me to strive to be the best. . . . I have witnessed the effects of alcohol and drugs firsthand, and it has taught me that drugs are not the way to deal with life’s bleak realities. I use society as my motivation to excel in all that I do because as a teenage Black female I am not expected to do well. There is a sense of satisfaction in knowing I achieved more than was expected, but more important, I achieved more than I expected. My hard work paid off. . . .*

MEYERHOFF SCHOLAR

When we read or hear about young African American women in our society, we usually find that the emphasis is on problems—from welfare and teenage pregnancy to violence and drugs. Rarely do the media focus on the success of young Black girls in school or of African American women in professional careers. For example, despite the fact that the nation’s teenage pregnancy rates have steadily declined since 1991,<sup>1</sup> and that the majority of the nation’s pregnant teenagers are not Black,<sup>2</sup> it is common nevertheless for the American public immediately to associate the expression, “babies having babies,” with young Black girls. This association is largely created and reinforced by images presented in the media of young African American women in trouble, either as unwed mothers or, in more recent years, as gang members.

Less well known are the significant accomplishments and value of African

American women and the enormous role they can, and do, play in our nation. Consider the prose of Nobel Prize-winning writer Toni Morrison, and the courageous voice of one of America's most eloquent child-advocates, Marian Wright Edelman. African American women are achieving at the highest of professional levels, from college presidencies to cabinet posts. Consider, for example, the appointments of Dr. Shirley Jackson, a physicist and the first African American female to earn a Ph.D. in any field at the Massachusetts Institute of Technology, as president of Rensselaer Polytechnic Institute, one of America's major technological universities, or of Dr. Condoleezza Rice as the President's National Security Advisor.

Notwithstanding these positive accomplishments, most Americans—Black and White—still know very little about these high achievers. Increasingly, entertainers—both women and men—send mixed signals to young Black girls about who they should aspire to become as they move toward womanhood. Often, these images, which tend to be unflattering and even at times degrading, focus on a culture that is excessively influenced by glamour, sex, and violence. In *Reviving Ophelia*, Mary Pipher discusses the powerful influence of the media in shaping girls' definitions of themselves through teen magazines, advertisements, music, television, and movies.<sup>3</sup> Indeed, walking through a high school and looking at the clothes and listening to the conversations of young adolescent African American girls, one cannot help but notice the enormous influence of the media and entertainers.

One career aspiration mentioned frequently by African American girls from various geographic settings is to become a cosmetologist, or beautician, because they have seen many examples. Other young women, like their male counterparts, dream of becoming young professional basketball players, and as the role of African American women in professional sports grows, we can expect increasing numbers of girls to aspire to that profession, notwithstanding the lack of realism associated with this choice. In contrast, one study, focusing on the lives of rural and urban African American girls,<sup>4</sup> found that the girls raised in rural areas most frequently cited teacher, nurse, doctor, and lawyer as their career aspirations. For urban Black girls, career aspirations most often included such professions as doctor, day-care worker, teacher, lawyer, model, and astronaut. Given the significant impact of television on children, it is unfortunate that only a handful of shows provide constructive examples of African American women in the professions, and even those shows superficially reflect what the professions actually involve. Whether on television or elsewhere, rarely does the public hear

about the success of African American women in their careers or about the efforts of millions of African American families who are working hard to raise their daughters to excel—families that are doing all they can to give these girls all possible opportunities and to protect them from the dangers of growing up in our society today.

## **Significance and Purpose of the Book**

In her essay, “When Girls Talk: What It Reveals About Them and Us,”<sup>5</sup> Joan Jacobs Brumberg discusses a series of books that focus on the voices of girls and young women, including some based on social science research and others on actual biographical statements. According to Brumberg, “By listening to their voices, we should be able to learn a great deal about the ways in which the girls’ developmental processes are shaped by social life and cultural values in different class strata and ethnic communities.” We have captured the voices of many of the young Meyerhoff women, and in reporting what we have learned, we hope to contribute to the existing body of literature.

Moreover, according to the American Psychological Association’s recent Presidential Task Force on Adolescent Girls, most of the literature on this group focuses on the problems and stresses in their lives. The Task Force suggests that much more attention should be given to the success of adolescent girls in handling the stress and challenges they face.<sup>6</sup> Moreover, the Task Force asserts that, “An adolescent’s ethnicity has intense influence on her development, as it affects her sense of belonging in a world that often determines inclusion and exclusion on the basis of skin color. . . . [I]t is important to assess the interplay of what occurs within families and what occurs in the political, economic, social, and racial climates in which young girls are challenged. Perhaps the most resilient factor common to all ethnic minority groups is identification with family and community.”<sup>7</sup> By focusing on the young girls’ strengths and resiliency and on child-rearing strategies and practices that actually work, we can help parents, schools, and girls themselves during these critically important developmental years.

*Overcoming the Odds* strives to answer the question about African American girls and young women on the minds of countless parents, educators, and policy-makers: What does it take for these children to succeed academically? Far too often, we hear from both young African American women and

men that it is not “cool” to be smart and that many African American children who work hard to achieve academically are either isolated or ridiculed by their peers.<sup>8</sup> In fact, for young African Americans, the influence of peers—in this case, the lack of peer support for academic achievement—is so strong that even when they are positively influenced by strong parenting, their academic performance still suffers.<sup>9</sup>

Our book asks in-depth questions of both the academically successful young women in our sample and their parents regarding what has made the difference in their lives. It looks carefully at effective approaches taken by both the students and their parents. We focused on the families of young African American university women majoring in science or engineering and participating in the Meyerhoff Scholars Program for talented students in these fields at the University of Maryland, Baltimore County. Our efforts proved to be exciting given that few Americans in the general public have the opportunity to observe closely successful young African American women and their families—people who strive every day to overcome what appear sometimes to be insurmountable odds, ranging from peer pressure focused on sex, drugs, and violence to messages that permeate society and discourage high achievement, particularly among minorities and women.

Two recent books which provide refreshing perspectives on growing up as a young African American woman during the last quarter of the twentieth century are J. Okwu’s *As I Am: Young African American Women in a Critical Age* and Rebecca Carroll’s *Sugar in the Raw: Voices of Young Black Girls in America*. Consider, for example, the voice of a young 14-year-old girl who spoke about why Black girls do not lose their self-esteem:

I never have the luxury of knowing what it’s like to not be branded in society. I read somewhere once that young White girls lose their self-esteem around this age and that Black girls don’t, which is kind of weird, since Black girls have so much more to deal with. Maybe it’s because we have so much to deal with that we don’t want to risk giving up our self-esteem because then we’d really be in trouble. We’d still have all the issues we have to negotiate with no self-esteem. Sounds grim. I’m not saying that I’ve got this huge amount of self-esteem; I’m saying that what amount I do have is mine.<sup>10</sup>

What makes the young women we studied so special is that they are excelling academically and planning to pursue professional and graduate

degrees in science and engineering. *Overcoming the Odds* reports the findings of our research and offers concrete strategies on how to increase the numbers of young Black girls who succeed in these areas, thus enhancing a significant and precious national resource.

Why is it important to look at this group? First, it is imperative for the nation to know the reality about the achievement level of young Black women in American society today. It is encouraging that substantially more young Black girls over the past twenty-five years have been succeeding in school and going on to college and beyond. Approximately 74 percent of African American women, 18 to 21 years old, had graduated from high school as of 1997, compared with only 65 percent in 1975. By comparison, for the same age cohort, 63 percent of Black males and 82 percent of White females had graduated from high school as of 1997, compared with 55 percent of Black males and 81 percent of White females as of 1975.

Regarding SAT performance, more African American students are taking the SAT than ever before (approximately 115,000 in 1998 compared with almost 98,000 in 1988).<sup>11</sup> However, the 1999 mean combined math and verbal score for this group was only 856 compared with 1055 for Whites.<sup>12</sup> Moreover, only 4 percent of African Americans who took the exam earned combined scores of 1200 or higher, compared with almost one quarter of White students. African American women in 1999 had a mean combined score of 850, compared with combined scores of 866 among Black male high school students and 1036 among White female students.

Regarding college-attendance rates, despite the low average test scores, the number of African American women attending college has grown substantially the past twenty-five years. While approximately 26 percent of Black women, 18 to 21, who had graduated from high school as of 1975 were enrolled in college that year, 38 percent of those who had graduated as of 1997 were attending college that year. The 38 percent figure among African American women in 1997 compares with 28 percent and 49 percent of Black men and White women, respectively.<sup>13</sup>

Data regarding the college-level progress of African Americans, especially young Black women, also are encouraging on the whole.<sup>14</sup> Blacks account for approximately 11 percent of the total college enrollment, and they earn roughly 8 percent of all bachelor's degrees, slightly under 4 percent of all doctoral degrees, and 6.5 percent of first-professional degrees. African American women earned almost two thirds of all bachelor's degrees awarded to Blacks in 1997, including nearly half of the degrees awarded to



African Americans in computer science and 30 percent of the degrees in engineering. In contrast, among Whites, women earned only 23 percent of the bachelor's degrees in computer science and 15 percent of the degrees in engineering. It is not surprising that the proportion of these degrees going to African American women compared with African American men would be higher than their White counterparts, primarily because African American men experience substantially more academic problems than their White counterparts.

Data from the most recent National Science Foundation report (2000)<sup>15</sup> show that once in college, African Americans accounted for 7 percent of all science-and-engineering bachelor's degrees in 1996. At the doctoral level, only 3.0 percent of all science and engineering degrees were earned by African Americans in 1997 (607 of 20,233). Black women accounted for 1.6 percent (280) of all science and engineering doctorates, compared with 29.6 percent earned by White women (5,180). Among African Americans who earned science and engineering Ph.D.s in 1997, women accounted for 46.0 percent, and men accounted for 54.0 percent (328). Data on preparation of medical doctors<sup>16</sup> show that 7.1 percent of all medical degrees awarded in 1996-97 were earned by African Americans (1,107 of 15,571). Of these, African American women received 4.4 percent (684) compared with 27.6 percent earned by White women (4,292). Among African American medical-degree recipients, women earned 61.8 percent, and men 38.2 percent (423).

A second compelling reason for studying high-achieving young Black women in science and engineering is to understand the special support often required for success in these fields. In our recent study focusing on Black students—both those in the Meyerhoff Program and those with comparable backgrounds who attended other institutions without the level of support provided by the Meyerhoff Program—we found that nearly 90 percent of the Meyerhoff students graduated in science while fewer than 50 percent of the comparison group had done so.<sup>17</sup>

Third, it is important that we learn more about those students who are succeeding at the highest levels in order to identify best practices and to encourage families, schools, and communities—working independently and together—to focus on these best practices. By focusing on high-achieving young African American women, we can pinpoint strategies and perspectives—even habits and behaviors—that can be useful to educators, parents, and policy-makers in combating the problem of low academic achievement among Black children.

In this connection, it is significant that we often assume that high-achieving students do not need much attention or support and that they will succeed on their own. Given this assumption, it is understandable that most of the attention and resources placed on minority education go to remediate the skills of students at the lower end of the academic achievement spectrum (who, all too often, also are at the lower end of the socioeconomic spectrum). Miller, in his book on minority educational advancement, points out that, "as a nation, Americans must be concerned with improving the educational prospects not only of those living in poverty and those whose parents have little education but also of those who are middle-class minority students,"<sup>18</sup> since many of these students are also not succeeding academically.

This important theme is echoed by the College Board in its 1999 study, *Reaching the Top: A Report of the National Task Force on Minority High Achievement*,<sup>19</sup> which finds that although top students typically come from educationally and economically advantaged families, this is not the case for minority students. Minority students from middle-income families are not achieving at the same levels as their White and Asian American counterparts. In other words, the achievement problem exists at all socioeconomic levels within minority groups.<sup>20</sup> Some attribute this low performance, and the resulting achievement gap, to problems of values held by African Americans,<sup>21</sup> though clearly there are many other factors that need to be considered. What is especially significant, as the report points out, is that,

Until many more underrepresented minority students from disadvantaged, middle class, and upper-middle class circumstances are very successful educationally, it will be virtually impossible to integrate our society's institutions completely, especially at leadership levels. Without such progress, the United States also will continue to be unable to draw on the full range of talents in our population during an era when the value of an educated citizenry has never been greater.<sup>22</sup>

Moreover, few predominantly White universities have examined the question of why so few underrepresented minority students are among their top graduates each year, or what it takes to increase the number of African American and other underrepresented minorities among the high achievers. In response to this lack of attention, the College Board study calls upon both the higher education community and our elementary and secondary schools to make high academic achievement a top priority for minority students.

Finally, *Overcoming the Odds* is meaningful because many of the lessons we learned through our research are relevant to any family, school, or university interested in improving the academic performance of young African American students. When talking about success and high achievement, we must keep in mind that the definitions depend on the context. The young women in the Meyerhoff Program were in the top 10 percent of their high school graduating classes, earned combined SAT scores of 1200 or higher, and have maintained higher than a B average in university-level science and engineering courses. Obviously, when talking about success in general terms, we want to increase the number of students who do well and go on to college to major in the programs of their choice. This book focuses specifically on the pipeline of young women who are future scientists and engineers.

### Importance of the Family

One of the primary assumptions of this book is that the family is crucial to the academic success of children. As was true in our first book about young Black men, *Beating the Odds*,<sup>23</sup> the most important and most frequently mentioned source of strength for the young Black women we studied has been the students' mothers. The following quote, from one of the students, reflects the important contributions of mothers to the academic success of their daughters (in this case, in terms of selecting an area of study).

*I guess my mom has always encouraged me. I wouldn't say she forced me, but she has always strongly influenced me to be in the sciences. Ever since I was little, she would tell me, "You're going to be a scientist. What kind of scientist do you want to be?" So it really just got ingrained in my head.*

Several researchers who describe the important role mothers play in raising their daughters have found that there is strong communication between the mothers and daughters and that these mothers raise their daughters to be economically independent, strong, self-confident, and capable of handling family responsibilities.<sup>24</sup> This socialization of African American girls tends to place less emphasis on cultivating stereotypical qualities of femininity (e.g., limiting displays of assertiveness) and more emphasis on encourag-

ing a combination of self-sufficiency and the traditional roles of nurturing and child care. These mothers often encourage the girls to stand up for themselves as a means of survival.<sup>25</sup> In fact, one study found that as these girls get older, they often tend to continue talking openly to their mothers and perceive their mothers as talking openly with them and telling them about their lives.<sup>26</sup> Another study, by Signithia Fordham, found that parents of high-achieving African American girls tend to limit their daughters' friendships and encourage their involvement in religion, while parents of underachieving girls tend to allow, even encourage, many friends and dates and are generally indifferent about religion.<sup>27</sup> Fordham also found that families of high-achieving girls tend to prepare their daughters in such a way that while the girls are aware of the larger society's perception of them, they are able to deemphasize the possible limitations that might be imposed on them and to focus more heavily on developing strong academic skills.<sup>28</sup>

Regarding the families of the Meyerhoff students we studied, it is significant that in those families where there were two parents living in the home, often both parents played important roles in helping their child develop self-esteem and in setting expectations as well as limits. Throughout the interviews, we found numerous examples of fathers and mothers who were actively involved in their daughter's education; in fact, many of the daughters speak about the important roles both of their parents played in their success.

In our study, we found it important to examine a variety of issues related to preparing African American girls to be successful, including health (physical and mental), education, and socioeconomic status.

## **Physical and Mental Health**

While it is not surprising that some young African American girls experience a variety of health-related problems, it may be somewhat surprising that this group actually fares better in certain areas than other groups of girls. Research indicates, for example, that Black girls have higher self-esteem, healthier body image, and greater social assertiveness than their White counterparts,<sup>29</sup> and they express fewer concerns related to image and appearance (e.g., weight, style, clothing) than do White or Asian American girls.<sup>30</sup> In fact, one study found that 40 percent of Black girls considered themselves attractive or very attractive in contrast to only about 9 percent of

White girls.<sup>31</sup> Nevertheless, the fact remains that 60 percent of the Black girls did not consider themselves attractive or lacked self-esteem. In addition, the vast majority of eating disorders (90 percent) are found among White rather than Black girls and young women.<sup>32</sup>

Also, the overall rates of drug use for Black schoolgirls are actually lower than those of their White counterparts, and Black schoolgirls who are involved in extracurricular activities are less likely to use alcohol and marijuana than White girls similarly involved.<sup>33</sup> As might be expected, both Black and White female adolescents who illicitly abuse drugs are more likely than nonusers to avoid going to class, break school rules, be suspended, have problems at home (particularly with mothers), and have a greater number of sexual partners.<sup>34</sup> Other studies have also found that fewer Black teenage girls smoke than their counterparts of other races,<sup>35</sup> and Black girls are less likely than White or Hispanic girls to contemplate suicide, although the percentage remains high (22 percent).<sup>36</sup>

Self-esteem, as noted, is an important issue among young girls, and it is pivotal for high-achieving African American girls. Although girls generally enter puberty feeling self-confident, they become less so during adolescence, and they tend to have fewer positive feelings about themselves than do boys during this period. In contrast with other girls, however, African American high-school girls report higher feelings of self-worth.<sup>37</sup> In particular, girls who identify strongly with their ethnicity tend to have higher self-esteem than those who do not. However, African American girls classified as gifted, in contrast to African American girls generally, sometimes have more difficulty than their White counterparts developing social and racial identity because they have a variety of demands placed upon them.<sup>38</sup> Besides often having to handle conflicting cultures between home and school, they frequently feel isolated in gifted classes where they see few others like themselves.<sup>39</sup>

Regarding sexual behavior, a significant number of American girls report having sexual intercourse between the ages of 15 and 19. In fact, about half of both Hispanic and non-Hispanic White girls and two thirds of Black girls report engaging in intercourse between 15 and 19; and, even before 15, we find that about 25 percent of White and Hispanic girls and 39 percent of Black girls report having sex.<sup>40</sup> As might be expected, girls who have earlier sexual intercourse are more at risk of unplanned pregnancies and sexual victimization. Clearly, the most talked about challenge facing these young women is teen pregnancy, which has numerous negative factors associated