

ALUMNI PERCEPTIONS OF THE MCNAIR SCHOLARS PROGRAM  
AT KANSAS UNIVERSITIES

By

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B.A., Ottawa University, 1968  
B.S., The University of Kansas, 1971  
M.S., Kansas State University, 1977

AN ABSTRACT OF A DISSERTATION

Submitted in partial fulfillment of the  
requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction

College of Education

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Manhattan, Kansas

2007

## **Abstract**

This study investigated the strengths and weaknesses of the McNair program at the three Kansas Regents institutions. The population included 259 former McNair program participants from Kansas State University (KSU), the University of Kansas (KU), and Wichita State University (WSU) who graduated with baccalaureate degrees between 1996 and 2004. These alumni were asked to complete a two- part survey. Part one collected data on McNair alumni perceptions of the strengths and weaknesses of the program on a thirty-three item, five-point Likert scale. Additionally, part one collected data on McNair alumni recommendations regarding the amount of emphasis that should be placed on program services and activities. Next, part two collected selected demographics. This provided useful data to examine how selected demographics relate to program perceptions.

One hundred and thirty-seven of the 259 McNair alumni completed the survey. Overall, the results of the data suggested that they perceived the services and activities to be more of a strength than a weakness. Also, the recorded comments by the alumni indicated that their experiences as McNair scholars were positive.

McNair scholar alumni recommended providing more assistance with how to interview prospective faculty mentors, obtain financial assistance, and stay abreast of resources that would increase the number of McNair scholars enrolling in graduate school and completing a graduate degree.

Further study is recommended to survey McNair alumni who have completed

doctoral degrees regarding the need for services that would help strengthen areas that were perceived to be weaker than others. These areas include “Enrollment in a Graduate School Program Leading to a Doctorate Degree” and “Selecting and Working With a Faculty Mentor”. Additionally, further study is recommended to investigate how alumni differ in their perceptions of the strengths and weaknesses of the McNair Program by major field of study.

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Major Professor  
Dr. Charles Oaklief

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## **Dedication**

This dissertation is dedicated to my dear husband, the late

William “Bill” A. Greene,

for his love, patience, and support

in helping me to succeed in earning this degree.

I thank God for the very precious time that

Bill and I shared together.

# **Alumni Perceptions of the McNair Scholars**

## **Program at Kansas Universities**

### **CHAPTER 1 - The Problem and Introduction**

#### ***Introduction***

There are a number of studies on the impact of family income and first-generation college status on obtaining undergraduate and advanced degrees. Indeed, Blake (1998) cites a National Center for Education Statistics study that suggests a student's success in being able to complete a college education is profoundly influenced by her/his parents' education level. Blake's study suggested that first-generation college students are more likely to have lower incomes than those students whose parents graduated from a four-year institution. Furthermore, the author stated that parents without higher education experience often lack understanding of college and awareness of available financial assistance resources. "Thus, they may be intimidated by their children's efforts to enter these unknown institutions. Students from families with little postsecondary education experience may also be less likely to see the value of a higher education" (Blake, 1998, p. 335).

A study conducted by Warburton, Bugarin, and Nunez (2001) noted a relationship between a parent's education level and a student's persistence in higher education. They found that first-generation college status was shown to have a negative association with students' academic preparation and persistence. For instance, Warburton et al., (2001) noted that first-generation students were less likely to take high school calculus and other rigorous courses.

Additionally, first-generation college students were less likely to take college entrance examinations. Also, first-generation students who did take these examinations were more likely than their peers to have lower scores (Warburton et al., 2001). Once in college, first-generation students had lower first-year grade point averages (GPAs) than students whose parents had a college degree (2.6 vs. 2.8 GPAs). First-generation students were more than twice (21 % vs. 9 %) as likely to leave college without returning (Warburton et al., 2001).

In their discussion of the conditions that limit access and opportunity, Merriam and Brockett (1997) stated “This widening gap between rich and poor is reflected in studies of participation in adult education that consistently link participation with socioeconomic status and previous levels of education.” (p. 196). Merriam and Brockett (1997) indicated that the pattern is especially difficult to end since it is intergenerational and perpetuated by the institutions of society.

According to Mortenson (1999), federal higher education policy recognizes that certain educational barriers, such as being from a low-income, first-generation college and ethnic minority family background, limit higher educational opportunity. Federal funding provides programs to address these barriers. These programs include student financial assistance and academic support services.

“What our analysis of data shows is that higher educational opportunity is strongly associated with parental educational attainment. Only about 30% of 18 to 24 year olds whose parents did not graduate from high school reach college, compared to about 85% of 18 to 24 year olds where the householder has a bachelor’s degree or more from college” (Mortenson, 1999, p. 1).

Merullo (2002) suggested that his fellow colleagues, teachers, and administrators who work with first-generation college students may find it useful to try to understand the complexity of their predicament. He stated:

Perhaps it might be helpful to think about another friend of mine, someone who grew up in a large, lower middle class, Irish-American family and was the only one of seven children to go to college. Recently she told me that her older brothers and sisters not only had failed to read to her as a child, but had pointedly chosen not to read to her, urging her, instead, in the direction of television and toys. The clear message was that reading would bring her nothing but trouble, would link her to the oppressor in a way that the rest of the family found distasteful (p. B11).

Merullo (2002) acknowledged this seems absurd to those of us who value education and the richness that it has brought to our lives. Yet, he notes, for many students, this attitude is not what they bring with them to campus. Fortunately, Merullo contended that many will benefit from counseling. However, some of these students, in fact too many, will revert to the “shadows of a free and democratic society that, more and more with each passing year, builds stone walls between the well-off and the poor, decorates them with ivy, and tacks up a sign: Please Apply” (p.B11).

All the same, since the 1990's, the dominance of the majority population in the United States has been more difficult to sustain due to the growing numbers of individuals from ethnic and racial minority groups (US Bureau of the Census, 2006). Consequently, the changing demographics in our society have brought about a need for cultural awareness and diversity training in the workplace and in education.

Naturally, those in decision-making roles in our society are wrestling with the implications of the changing demographics. A report by the Advisory Committee on Student Financial Assistance (as cited in Burd, 2002) indicated that rising college costs prevented 170,000 top high school graduates from low and moderate-income families from entering college in Fall 2002. Furthermore, the committee warns that unless the states heed the urgency to revitalize their need-based student aid programs, millions of other students will be denied access to a college education. Burd (2002) argued the main reason for low-income students' inability to afford college was the shortage of federal and state grants. He indicated that instead families were responsible for a larger portion of the costs through loans, work-study, and their own personal finances.

The Advisory Committee on Student Financial Assistance reported (as cited in Burd, 2002) that low-income students who attend a public four-year college must pay about \$7,500, or two-thirds of the institutional costs each year, after all grants are disbursed. Burd (2002) notes that this cost can be prohibitive for families with incomes of \$25,000 or less. "Given a financial barrier like this, it's not surprising at all, then, that the educational expectations, the plans, the actual enrollment, and persistence of low income graduates fall far short of their peers who are better off financially" (A22). Burd (2002) called for increases in Pell Grants and incentives for states to increase their own need-based aid programs, and/or institutions to slow down their tuition and fee increases.

Bowen (1980) states in his classic text, *The Costs of Higher Education*, "Because higher education is often a prerequisite for disadvantaged groups and a strategic point of access to the mainstream American society, colleges and universities have been the focal point in the struggle for personal opportunity and human equality" (p. 87). Thus a number of

programs and initiatives have been established to assist disadvantaged groups to gain a college education. Furthermore, the US Congress began its commitment to provide educational opportunities for Americans regardless of their socio-economic circumstances by funding the TRIO programs under Title IV of the Higher Education Act of 1965. TRIO refers to a series of programs (Upward Bound, Talent Search, and Student Support Services) that are designed to help low-income Americans enter and graduate from college. Since 1965, TRIO has been extended to include Educational Opportunity Centers, Veterans Upward Bound, Upward Bound Math-Science, and the Ronald E. McNair Post-Baccalaureate Achievement (McNair) programs to further provide educational opportunities to disadvantaged Americans.

Newman wrote (as cited in Merriam and Brockett, 1997, p. 241):

The exclusion, oppression, and discrimination of certain groups from mainstream society are historically embedded in society's evolution. The situation comes to feel normal, so that "one group of people accept as normal, and in need of no explanation, conditions that are in the interest of another group altogether." This phenomenon termed hegemony, "refers to the standards, ideas, and modes of behavior that come to pervade the institutions of a society, are accepted and lived by the population, and so become the media through which the population is controlled."

## **The Ronald E. McNair Post-Baccalaureate Achievement Program**

Recognizing the challenge of the growing demands of an ethnically diverse population in higher education, the federal government has provided funding for the Ronald E. McNair Post-Baccalaureate Program. The US Congress established the McNair program in part to pay tribute to the African American astronaut killed in the 1986 USS Challenger Space Shuttle disaster. In addition to being an astronaut, Dr. McNair was a physicist who earned his doctorate from the Massachusetts Institute of Technology. The McNair program was initially funded in 1989 through the US Department of Education and is currently located on 177 campuses. The program's primary goal is to prepare low-income and first-generation, and minority college students for graduate education leading to completion of the doctoral degree. The preparation includes academic support, graduate admissions assistance, and financial aid counseling. Additionally, students are provided Graduate Record Examination preparation services, a summer research internship opportunity with a faculty mentor, undergraduate research conferences with support for travel, and sponsored graduate campus visits (US Department of Education, 2007).

The McNair program is federally funded to institutions of higher education for projects designed to prepare participants for doctoral studies through involvement in research and other scholarly activities. The requirements for entry into the program are clearly discussed in Standing's (1999) early work. He indicated that:

Program participants are at least sophomores from disadvantaged backgrounds and have demonstrated strong academic potential.

Institutions work closely with these participants through their undergraduate requirements, encourage their entrance into graduate

programs, and track their progress to successful completion of advanced degrees (Standing, 1999, p .2).

To ensure that the federal investment in the McNair program is meeting its goal, an annual report is required of all programs. Additionally, federal reports provide profiles of the McNair programs across the country. However an in-depth examination of the effectiveness of the program may be in order.

### ***Purpose Of The Study***

The purpose of this study is two-fold: the first aspect is to examine the strengths and weaknesses of the McNair Program as perceived by McNair alumni; the second aspect is to determine if differences exist among the McNair alumni perceptions related to gender, race, and ethnicity. This investigation provides needed research tools and findings to aid in future assessments of McNair Scholar Programs.

### ***The Need and Significance for The Study***

A study of McNair programs is needed at this particular time because it:

- identifies of strengths and weaknesses of the program;
- contributes to reversing the dearth of research on the McNair program;
- provides further analyses of the socio-economic barriers faced by the program's targeted population; and
- provides further evidence of the program factors that have an impact on McNair Scholars.

Through the investigation of these factors the overall importance and significance of the program can be assessed. The need and the significance for the study are supported by

the ideas discussed in the seminal work of Grimmett, Bliss, Davis, and Ray (1998). These authors reported the following:

The consequences of misguided academic program choices and incomplete preparation among low-income, first-generation-college/university undergraduate students may be overwhelming or fatal to the pursuit of advanced education. Such students' perceptions of this transition process may be important indicators of how well existing academic and other support systems are working for them (p. 405).

Thomas, Farrow, and Martinez's (1998) research on student retention and persistence concluded that the availability of academic support services had an impact on disadvantaged students graduating from college and graduate school. Although there are numerous studies on academic support programs to assist disadvantaged students entering and graduating from colleges, no parallel exists to work on covering success in entering and completing graduate school (Grimmett, et al., 1998).

### ***Research Questions***

The central research question of this study is which program factors (services and activities) are perceived to be strengths and which weaknesses by McNair alumni from selected school programs in Kansas? To address this question three programs located at Regent's Universities in the State of Kansas were selected: Kansas State University (KSU), The University of Kansas (KU), and Wichita State University (WSU). Furthermore, the initial question raises three issues.

1. What are the perceptions of McNair alumni regarding the strengths and weaknesses

of the six primary program factors listed below?

- Academic Research Workshops;
  - Selecting and Working With a Faculty Mentor;
  - Graduate Record Examination (GRE) Preparation;
  - The Summer Research Internship;
  - Academic Support Services;
  - Enrollment in a Graduate School Leading to a Doctorate Degree.
2. What are the perceptions of McNair alumni regarding the strengths and weaknesses of other program factors, such as availability of, and assistance from, the faculty mentor, and the amount of the stipend provided to McNair Scholars?
  3. Are there differences among McNair alumni perceptions related to gender, race, and ethnicity about the six program factors?

The following research questions provide data which describes McNair alumni and their attitudes towards education.

4. Are the national program eligibility criteria reflected in the following data collected from Kansas Universities McNair Scholar alumni?
  - First-generation college status
  - Family income status
  - Race and ethnicity
  - Grade Point Average (at time of graduation)
  - Other colleges attended
  - Major field of study

5. What were the perceptions and attitudes of McNair Scholar alumni towards getting an education?

- Perceptions about being a McNair Scholar
- Attitude towards getting an education prior to earning an undergraduate degree
- Attitude towards getting an education after earning a college degree

### ***Limitations***

1. The study is limited to McNair Scholar alumni who attended Kansas State University, University of Kansas, and Wichita State University who participated in the program during the targeted years (1996 through 2004).
2. The number of McNair alumni was limited to 137 of the 259 McNair alumni who completed the program.

### ***Assumptions***

1. Respondents will understand the intent of the questions and complete the survey accurately.
2. The participants in the study will provide honest and useful responses and assessments to the survey instrument.
3. The McNair alumni involved in the study have had the academic preparation and credential needed for admission into graduate school and completion of a doctoral degree based on the program eligibility requirements.
4. The programs at Kansas State University, The University of Kansas, and Wichita State University share similar purposes and provision of services, activities, and student involvement.

### *Definition Of Terms*

The following terms are defined with regard to their use in this study:

**First-generation student:** a student whose parent(s), or the parent with whom they regularly resided prior to the age of 18 did not complete a bachelor's degree.

**Low-income student:** refers to a student whose income, including the family income, falls within the US Department of Education's low-income levels.

**McNair Scholar Alumni:** refers to a student who has graduated with a four-year degree since 1996 and completed the requirements of the McNair Scholars Program as an undergraduate.

**Ronald E. McNair Post-Baccalaureate Achievement Program** (referred to as the McNair Scholars Program): a federally funded program designed to assist academically talented students with socio-economic barriers who are in pursuit of doctoral studies. The goal of this program is to produce college and university faculty who would be more reflective of the diversity in the United State and our society. This program is in honor of the late astronaut and physicist, Dr. Ronald E. McNair, who overcame the socio-economic barriers of race, as a first-generation college student from a low-income family.

**TRIO:** a series of programs (Upward Bound, Talent Search, and Student Support Services) that were initially funded in the 1960's. The programs were federally funded to provide opportunities in higher education for low-income students. Over the years, TRIO programs have been expanded and are enhanced to provide a wider range of educational services to reach more students in need of assistance, such as the Ronald E. McNair Post-baccalaureate Achievement Program.

**Underrepresented:** students whose racial or ethnic groups are employed as faculty

members at colleges and universities at a disproportionately lower rate than that of the majority group. According to the US Department of Education, the groups which are underrepresented are African Americans, Hispanic, and American Indian/Alaskan Native.

## CHAPTER 2 - Review of the Literature

The scarcity of literature involving advanced studies for low-income, first-generation, and students of color beyond the baccalaureate degree posed a unique problem. How was it possible to discuss an issue when it had not been examined in-depth, or at the very least touched on the issues deemed germane to this investigation? Moreover, previous works that did focus on the topic failed to examine the specific role programs, such as the McNair Scholars program, might have played. To address these shortcomings this chapter has been divided into four parts. The first part, “Historical Antecedents of Higher Education and the McNair Program”, briefly explores the historical precedents covering higher education in the United States from the early 1600s to the present. The second part, “Socio-economic Issues”, examines the socio-economic issues that gave rise to the need for a McNair Scholars program. The third part, “TRIO: Foundations of the McNair Scholars Program”, discusses the foundation of TRIO programs of which the McNair Scholars program is an integral part. The fourth and final part, “Legislative Authorization of the McNair Scholars Program”, examines the current state of the McNair Scholars Program and its primary functions. Hopefully, the organizational structure of this chapter will allow the readers to further develop a socio-historical understanding of the context that produced the McNair Scholars program.

For the purpose of this study the review of the literature addresses the historical antecedents of the McNair program. This review presents a rationale for the need to prepare underrepresented students for graduate school leading to a doctorate degree. A review of

these studies follows.

### ***Part I: Historical Antecedents of Higher Education and the McNair Program***

Historically, the mission of higher education is to prepare students to function effectively as employees, parents, and citizens (Smith, 2002). Slaughter (as cited in Smith 2002) notes that the official principles of higher education have moved from an emphasis on the joyful, spiritual, or social aspects of learning to more of an attempt to meet the employment demands for highly skilled and educated employees.

What is a university? A description could be drawn from its ancient designation of a stadium general, or “school of universal learning.” This description implies the assemblage of strangers from all regions in one spot: else, how will you find professors and students for every department of knowledge? And in one spot; [or]else, how can there be any school at all? In its simple and rudimental form, it is a school of knowledge of every kind, consisting of teachers and learners from every quarter. A university seems to be, in its essence, a place for communication and circulation of thought (Smith, 2002; p. 2).

According to Smith (2002), higher education in America can be viewed in three time periods. The first epoch (1636-1862), represents a period of conflict that relates to the establishment of colleges in a beginning democratic society using only the traditional European institutions as models. The second period (1862-1960) shows the influence of the federal government as it opened the doors of higher education to diverse populations. The third period (1960-present) observes higher education in an identity crisis. The continuing question during each time period is: what is the purpose of higher education?

### ***The First Historical Period (1636-1862)***

Smith (2002) stated that the primary mission of America's first institutions of higher education, such as Harvard and Yale, was to train individuals for the ministry and to preserve and maintain cultural norms brought from Europe. Smith (2002, p. 2) states, "The goal was to provide an educated elite who could lead in the new society. While the goal of preserving traditional norms was widely accepted as the primary mission of early colleges, it was not without its challenges." Knowles' (1960) assertion that the "American dream," which is the belief that every person can get ahead if he is willing and works hard, began to develop and was influential in the growth of adult education.

During the first historical period, colleges such as Harvard attempted to provide access to economically poorer students through employment or assessments placed on wealthier students. To fulfill part of its charter to reach out to the local Indian population, Harvard established an "Indian College" in 1654. However, the curricula were not sufficient in meeting the individual needs of its students. Thus, the "Indian College" was not successful. Several institutions, for example Amherst, Brown University, and William and Mary, tried to provide an opportunity for those who did not receive adequate preparation for college by offering various degrees instead of the traditional liberal arts degree. These degrees were widely viewed as inferior degrees that would lead to a lowering of standards (Smith 2002).

Harvard and Yale founded colleges, such as Amherst and William and Mary Colleges, to extend educational opportunity to those who could not afford to attend Harvard or Yale (Smith 2002). Although these schools helped to make higher education more accessible, they also had the impact of segregating those students who, due to their lesser

resources, were most likely less prepared. However, to cover expenses, colleges realized that they needed to accept students who were not academically prepared for college. Most colleges responded to this dilemma by offering pre-college courses and/or tutoring to those students who needed it.

### ***The Second Historical Period (1862-1960)***

The beginning of the second historical period witnessed the federal government becoming involved in the American educational system. In 1862 the Morrill Act began a series of legislative acts that broadened the scope of higher education. Under the provisions of the Morrill Act, each state was guaranteed 30,000 acres of land per congressman. This land was to be sold to finance colleges committed to teaching agriculture and mechanical arts. The second Morrill Act in 1890 reinforced support for this expanded higher education mission and also prohibited federal funding to states where discrimination in higher education continued to exist. In addition, the Hatch Act in 1887 established extension courses for farmers and agricultural stations at colleges (Smith, 2002).

Although the second Morrill Act attempted to provide equal educational opportunity, the practice of segregation continued, especially in the southern states. To counteract this discrimination, black colleges, such as Tuskegee Institute in Alabama and Howard University in Washington, DC, were founded. During this time frame, women often attended colleges designed for women only. This is because females and blacks were excluded from the traditional curriculum that was provided only to white males (Smith, 2002).

In 1945 the G.I. Bill of Rights made a college education accessible to returning WWII veterans. Therefore, more than one million veterans were inspired to enroll in college by the

fall of 1946 (Smith, 2002). The enrollment of these veterans began to change the face of higher education.

Rudenstine (2001), former President of Harvard University, presented a historical overview of the institution's steps towards diversifying its student body. He indicated that Charles William Eliot, President of Harvard from 1869 to 1909, envisioned a university that that reflected of the diversity in the population of America in terms of race and ethnicity. According to Rudenstine (2001), President Eliot viewed this as a positive aspect in American democratic society. Thus, Eliot made Harvard accessible to some of the nation's immigrants and also to a small number of African Americans (Rudenstine). Prior to Eliot's tenure at Harvard, there were no black graduates from Harvard. This changed during Eliot's presidency, as eight black students graduated from Harvard (Rudenstine,).

W.E.B. DuBois, who graduated from Harvard in 1890, credited Eliot with broad vision (Rudenstine, 2001). DuBois states that Harvard had evolved from being an institution for the rich and social elite of New England to one that reached out to students from other parts of the country, to Yellow and to black students (Rudenstine, 2001). Clearly Eliot recognized that diversity could be a source of hostility and turmoil. To that extent Eliot tried to quell problems before they began by providing for a better climate at the institution.

According to Rudenstine (2001):

He [Eliot] knew that diversity can cause friction and turbulence, and can sometimes make the experience of being a student more difficult—and, at times, even alienating. But he insisted on the importance of a more open, diverse, and disputatious university, where a “collusion of views would promote “thought on great themes,”

teach “candor” and “moral courage,” and cultivate “forbearance and mutual respect.” He saw that an inclusive vision of higher education not only would benefit individual students, but was essential in a heterogeneous society whose citizens simply had to learn to live together if the nation’s democratic institutions were to function effectively, and if its ideals were to be fulfilled. He insisted, in other words, on the link between diversity in education and the requirements for citizenship and leadership in a diverse nation such as ours (p. 26).

### ***The Third Historical Period (1960-Present)***

By the 1960’s a wide variety of institutions began to test the former notions of higher education. To become college educated was no longer considered a privilege; instead it became more of a right. Gradually, a college education began to afford social mobility and also offered a curriculum that was increasingly relevant to one’s professional and personal goals. Weisman and Longacre (2000) stated the following:

The 1960’s represented the era of educational democratization.

Coinciding with the war on poverty, the civil rights movement, and the women’s movement were the beliefs that the people of this country are its greatest natural resource and that educating its citizens will strengthen the country. (p.362).

To accommodate the needs of students, classes began to schedule classes during the daytime and evening hours, weekdays and weekends. In addition, some of the institutions were taking other steps to make a college education more accessible. These methods

included work/study programs that linked the business world directly to higher education, classes through television that reached both urban and rural populations and correspondence schools that permitted students to learn at their own rate in their own environment. Colleges were established that reached out to specific populations who previously did not have access to college. “In Harlem, a no-cost night college opened offering babysitting services as well as tutoring to students who were mostly unskilled workers. Schools for Native Americans, Chicanos, and blacks came into existence with pre-college programs that offered tutoring and counseling” (Smith, 2002 p. 6).

The following presents a review of the literature that focuses on the socio-economic issues faced by McNair scholars and the need for a program such as McNair.

## ***Part II: Socio-Economic Issues***

“As Americans, we are raised to believe that social mobility, equal access to education, and a job for everyone is the cornerstone upon which our Nation was built. The reality is, however, that our American society is stratified” (Henricksen, 1995, p. 5). Low-income students do not receive the same academic or vocational training, as higher income students. Additionally, underrepresented groups often face barriers in accomplishing their educational goals (Henricksen, 1995).

Henricksen (1995) further indicated that structural barriers established in the higher education system limited minority students’ access to receiving a bachelor’s degree. reinforcing this idea, Karabel (as cited in Henricksen, 1995) states the “community college was nothing more than a structure by which class-based separation was continued, and that tracking existed within community colleges by means of vocational education.” In a study

by Dougherty (1994) the opponents of community colleges agreed that community colleges permitted more students to enroll in college at a lower cost and under less stringent admission policies than four-year institutions. However, a sizeable disparity exists between the number of students in two-year and four-year colleges who attain baccalaureate degrees. This factor can be attributed to community college students who typically are non-white low-income and first-generation college students. Additionally, these students, in many instances have fewer baccalaureate attainment goals (Henricksen, 1995).

Arenson (2004) in examining a report by the American College Testing Service (ACT) indicated that of the 1.2 million students throughout the United States who underwent ACT exams this year, only 22% were prepared for college-level work in English, mathematics, and science. The ACT attributes this low percentage to the fact that test takers did not enroll in the courses considered to be a minimum requirement for college-readiness: four years of English and three years of mathematics, science, and social sciences. Another problem that was discovered was that among those who took the full core curriculum, some students were not necessarily prepared for college, since some of their courses were not rigorous enough. The ACT reports that fewer black, Hispanic and American Indian students took the college preparatory courses that are required to obtain a college degree than non-Hispanic white students or Asian Americans (Arenson, 2004).

Developing this idea, Dougherty (1995) indicated that non-white students and lower-income students are not as confident as white students about college in that they wanted to succeed but were afraid of failing. The author also noted that such students were reluctant to achieve academically because success suggested that they were assimilated to the cultural norms intrinsic in their institution (Henricksen, 1995). To support this notion, the Center for

the Study of Community Colleges 1995 Transfer Assembly Study (1996) reported that 12% of Hispanic and black students transferred to a four-year college or university compared to 23% of white students.

According to Hrabowski (2004), some non-white students lack confidence in standardized tests or failed to accept their importance. As to why, he indicated that some families have heard for years that standardized tests are culturally biased. Hrabowski (2004) gave the example of a student of color who indicated to him “that while she knew she could read well, she had never done well on standardized tests because, as one of her teachers had stated, the test had not been developed with her in mind” (p. 203). It became clear that the student was led to believe that the test was developed by and for whites only (Hrabowski, 2004). However, many people throughout the nation are working to help all families realize that standardized tests are a valuable part of life and our society.

Although standardized tests are used for admission to colleges and universities, Malveaux (2004) questioned whether a test, such as the Scholastic Aptitude Test (SAT) is worth the hundreds or more dollars for preparation materials and instruction. She noted that the fee for the SAT handbook is \$70 and the fee for instruction can run as high as \$1,000. Malveaux (2004) wrote that this widens the racial economic gap, since a disproportionate number of students of color are from low-income backgrounds. She suggested that these findings mean those who could not afford the SAT prep instruction were more likely to achieve lower scores than their higher-income peers.

Richardson (1994) noted that in many inner-city and working-class neighborhoods, one is expected to gain employment and earn money after high school rather than continue their education. To illustrate this belief, Rendon and Valadez (1993) reported that the eldest

son of lower-income Hispanic families is usually expected to sacrifice postsecondary education because of his obligation to work and support the family. Other research studies, for example the work by Kanter (as cited in Henricksen, 1995), show academic testing and placement assessments are used as devices to segment students of color into low-level educational paths. This assessment found that non-white students were placed in classes at the pre-college or associate degree level more often than white students. In his study, Williams (1990) found that black students indicated that the lack of role models was a primary reason for not pursuing a college education. As Rendon and Valadez (1993) noted in their study on community colleges, professors exhibited a lack of a genuine cultural understanding of students.

To overcome these obstacles, several plans were introduced in the American Association of Community College's "Multicultural Strategies for Community Colleges" in 1995. For instance, several colleges began programs to recruit students to the science and engineering disciplines (Jones, 2001), while colleges in larger cities implemented programs to assist minority high school students to prepare for postsecondary education. In addition, involvement of faculty and staff was seen as a key factor in retaining minority students (Henricksen, 1995). In fact, many states are recruiting minority faculty and administrators with the goal of improving the campus climate for all students.

Henricksen (1995) concluded that the implications of research on the effects of race and ethnicity on access to education are numerous. Specifically, he revealed that systemic isolation of minority students in community colleges, due to academic difficulties or financial restrictions, limits minority students in attaining their individual academic goals and their motivation to stay in college.

Furthermore, Weidman, Twale, and Stein (2001) argued that under-representation of minority groups in the doctoral and professional fields of their choice was the result of the prevailing social climate within those departments and fields. Hurtado, Milem, Clayton-Pedersen, and Allen (1999) identified several likely consequences of the campus climate effect on students from underrepresented groups. First, individuals' and particular groups' perceptions of the environment are not negligible or insubstantial but have real effects on educational outcomes. Second, previous studies indicated the value of having diverse peers in the educational environment for such outcomes as enhancement of students' ability to engage in more complex thinking and consider various perspectives. Third, diversity can minimize racial discord and enhance learning environments.

Turner, Myers, and Creswell (1999) concluded in their study that institutions must improve the educational environment for minority faculty. They suggested that financial, tutorial, social, or emotional needs of all students should be considered in the socialization and professionalization process.

The Council for Opportunity in Education (2004, 2005) indicated that TRIO programs contribute to enhancing the climate for students on college campuses since students reflect America's multicultural and multiethnic society. This is accomplished by targeting students from diverse backgrounds.

Historically, millions of Americans have used college to remove themselves from poverty (The New York Times, 2002). What is more, this path to upward mobility has been narrowed over the last several years due to changes in financial aid programs that concentrate more on middle and upper-income students (The New York Times, 2002). Indeed, low-income students have more access to college today than 30 years ago because of such aid as

federal Pell grants. However, enrollment figures indicated startling differences in college attendance rates for high-income and low-income students with comparable academic abilities. Recently, economists Michael S. McPherson and Morton Owen Schapiro (as cited in the New York Times, 2002) indicated that a mere 5% of high achieving, high-income students do not enroll in college. On the other hand, 25% of high-achieving low-income students do not enroll in college.

Unfortunately, since the 1980's, both federal and state agencies have steadily decreased higher education funding (Mortenson 2001). In 2000, the total funding adjusted for inflation, was \$23 billion below the peak reached in 1979 (Mortensen, 2001).

The US Congress in 1972 ratified the Basic Educational Opportunity Grant, now known as the Pell Grant (named after the senator who initiated legislation for the grant). The Pell Grant is the foundation of federal student financial assistance programs. Each year, it provides millions of low and moderate income college students with essential assistance (King, 2003).

Despite the US Congress' commitment, Breneman (2002) warned that the most weighty policy questions for higher education are whether, and how, it will accommodate and educate the growing numbers of prospective students, many of them first-generation students from low-income families. However, most states now rely on increased tuition to meet college expenses and have disregarded the argument for additional need-based student aid to keep higher education accessible to low-income students. More recently in the report "Losing Ground," the National Center for Public Policy and Higher Education documented the implications of recent economic trends for diminished access to a college education for low-income students (Breneman, 2002). The outcome of the policies has shifted the burden

of college education costs from the general taxpayer to students and their families. Clearly, the issue of student debt and how far it can be pushed must be more carefully addressed.

Burd (2002) wrote that rising college costs prevented 170,000 top high school graduates in low and moderate-income families from entering college that fall. The committee warned that unless states heed the urgent need to revitalize their need-based student aid programs, millions more will be denied access to a college education. The main reason for low-income students not being able to afford college is the shortage of federal and state grants. This means families are responsible for a larger share of costs through loans, work-study, and their own paychecks and savings (Burd, 2002). Current findings indicate that low-income students who attend a public four-year college must pay about \$7,500, or two-thirds of the institutional costs each year, after all grants are dispersed. These costs can be prohibitive for families whose income is \$25,000 or less (Burd, 2002). “Given a financial barrier like this, it’s not surprising at all, then, that the educational expectations, the plans, the actual enrollment, and persistence of low income graduates fall far short of their peers who are better off financially” (1999, A22). Obviously, increases in the Pell Grant and incentives for states to increase their own need-based aid programs and for institutions to slow down their tuition and fee increases are sorely needed.

Schmidt (2004) stated that a report by the National Center for Public Policy and Higher Education found a college education to be less affordable in 2002 than it was in 1992. The report concluded that financial-aid spending was not keeping up with the cost of tuition (Schmidt, 2004).

In addition to the challenge of continuing to make a college education accessible to low-income students, higher education faces the challenge of the growing demands of an

ethnically diverse population (Brown & Gamber, 2002). According to Wilson (2002), African-American, Hispanic, and American Indian scholars, combined, represent a mere 8% of the full-time faculty nationally. She further indicated that while 5% of professors are African-American, approximately half of them work at historically black institutions. Proportionally, African-American faculty members comprise 2.3% at predominantly white institutions. This is similar to the percentage 20 years ago. According to a recent study of 700 faculty searches at three unidentified public research universities, 86% of the African-American hires and all of the American Indian hires were due to proactive strategies and special initiatives. In contrast, only 23% of the white professors had been hired under these circumstances (Wilson, 2002). This lack of faculty hiring could perhaps be related to racism.

With regard to the social issue of racism, Hale (2004) reacted with the following statement: “Racism is a disease ingrained in the fabric of American society. Racial prejudice becomes racism when one group has control over another group” (p. 5). He stressed that blacks, Latinos, Asians, and Native Americans have been the victims of racism in the United States. He also stated that racism in American society has had a harmful impact on the access and achievement of students of color in higher education (Hale, 2004). He continued by stating that true education should address the many contributions of various races and cultures in creative, believable, and genuine ways.

In discussing the racial/ethnic schema in higher education, Moody (2004) presents research that indicates how American society and various media have promoted the categorization of people into superior and inferior groups. She asserted that this categorization is deeply embedded in almost all of us. Rendon (as cited in Moody 2004) indicated that messages are clearly being sent by higher education institutions that European-

American students are perceived to be more intelligent than non-whites. To illustrate this point, Williams (as cited in Moody 2004) presented more than seventy-five oral history interviews with minority and majority faculty students, administrators, and staff at MIT. He found that negative stereotypes about intelligence persist.

Kivel (2004) discussed the socio-economic issue of one group's power over another group. He wrote that when one group amasses more power than another group, the more powerful group puts its members at the cultural center and other groups at the margins. Members of the more powerful group are accepted as the norm, which makes it difficult for them to see the advantage that they have (Kivel, 2004).

Minority faculty and students of color do not carry much weight in the balance of leadership at predominantly white institutions (Williams, 2004). Although there have been some slight gains over the years in the number of faculty and students of color at these institutions, more progress is needed. More promotion of multiracial leadership amongst the faculty, and encouragement of learning from each other's differences is needed. According to Williams (2004), this is needed to do away with the notion that persons of color are not equal as colleagues and potential intellectual leaders. To support his premise, Williams (2004) highlights the cultural intangibles of race, prejudice, and personal likes and dislikes that continue to impact the world of academia and career advancement beyond one's abilities and qualifications. He also believes that increasing the numbers of persons of color at all levels at the institution is a very important first step; however, he cautions that recognizing increased numbers is just the first step and not the final one in the process (Williams, 2004).

Jones (2004) wrote that universities utilize support services, such as counseling centers, to bridge the gap between the institution's academic and social cultures. He

suggested that scholars confirm that college holds significance for students that transcends the curriculum. Jones (2004) also pointed out that faculty mentoring and tutorial programs are effective support services in helping non-white students achieve success in higher education. “After 40 years of affirmative action, still only 5% of faculty are African American; 3% are Latino or Hispanic; 2 ½% are Asian American and less than 1% are American Indian” (Taylor as cited in Smiles, 2004). Taylor’s remarks were gleaned from his work with the Compact Institute. The purpose of the Compact Institute, which began in 1994, is to provide scholars who are underrepresented in postsecondary education with the critical skills needed to succeed in graduate study (Smiles, 2004). Faculty and administrators from around the country presented information and approaches for navigating the graduate education process. Between sessions, scholars were able to meet with recruiters from graduate programs from around the nation (Smiles, 2004). Currently, the Compact partners with the Southern Regional Educational Board, the New England Board of Higher Education, the Western Interstate Commission for Higher Education, the National Institutes of Health, the National Science Foundation, the Alfred P. Sloan Foundation, and the Office of Federal TRIO Programs Ronald E. McNair Program (Smiles, 2004).

It is clear that “.... student diversity contributes powerfully and directly to the quality of education in colleges and universities” (Rudenstine, 2001, p. 49). The wide range of backgrounds and experiences at Harvard challenges the university communities to think and examine all sides of issues and clearly address our assumptions and prejudices as well as “... develop the kind of understanding that can come only when we are willing to test our ideas and arguments in the company of people with very different perspectives, In short, it is time to be committed to sustaining the inclusive vision of higher education that is essential to

the university and to the nation (p.49).

“How can any institution of higher education, calling itself a university, be legitimate in its focus on liberal education unless it is committed to ‘universality’? True education should address the multiple and complex ways and contributions of various races and cultures in creative, credible, and authentic ways” (Hale, 2004).

The third part highlights the programs which provide assistance to students who are faced with the challenges of getting a college education. In addition, the programs are presented to illustrate how they are linked to the McNair Scholars Program.

### ***Part III: TRIO Foundations of the McNair Scholars Program***

The United States Congress demonstrated its commitment to equal educational opportunities for citizens regardless of their socio-economic circumstance by authorizing a series of programs to assist low-income Americans in securing a college education and moving on to participate more fully in American society (Council for Opportunity in Education, 2004). These programs are funded under Title IV of the Higher Education Act of 1965 and are referred to as the TRIO Programs (initially just three programs). While student financial aid programs help students overcome financial barriers to higher education, TRIO programs help students overcome class, social and cultural barrier to higher education (Council for Opportunity in Education, 2004). TRIO programs assist students from sixth grade through college and are described below:

- *Talent Search*—provides counseling, scholarships, and various student financial assistance programs. This early intervention program assists students who are

from low-income families and whose parents did not graduate from college to better understand their educational opportunities.

- *Upward Bound*—prepares students in grades seven through twelve for postsecondary education. This preparation includes instruction in literature, writing, mathematics, and sciences in high school facilities and college campuses after school, on Saturdays and during the summer.
- *Upward Bound Math/Science*—assists students from low-income families to strengthen math and science skills. Additionally, students receive instruction in computer technology as well as English and study skills.
- *Veterans Upward Bound*—assists military veterans to transition into postsecondary education through basic skills development. Additionally, veterans learn how to obtain support from resources such as the Veterans Administration, veterans associations, and a number of state and local agencies that serve veterans.
- *Student Support Services*—assists low-income and first-generation college and disabled students obtain their baccalaureate degrees. The services provided include free tutoring, and academic and personal counseling.
- *Educational Opportunity Centers*—serve displaced or underemployed workers from low-income families. These Centers assist participants with selecting a college and an appropriate financial assistance program.
- *The Ronald E. McNair Post-Baccalaureate Achievement Program*—created and named as a tribute to the late astronaut who died in the 1986 space-shuttle

explosion. The program is designed to prepare low-income and first-generation college students and those who are underrepresented in higher education to earn doctoral degrees. Additionally, the program is to prepare program participants for academic careers in higher education (Council for Opportunity in Education, 2004).

TRIO actually began with the Economic Opportunity Act of 1964, the original “War on Poverty” statute, which created the Upward Bound Program. The second TRIO program, Talent Search, was created under The Higher Education Act of 1965. The Higher Education Act of 1968 created the Special Services program. Thus, by 1968, the original TRIO programs were established (Upward Bound, Talent Search, and Special Services). It was in 1968 that the Upward Bound program was transferred from the Office of Economic Opportunity to the Higher Education Act (Council for Opportunity in Education, 2004).

The Council for Opportunity in Education (2004, 2005) refers to the decade of the 1970’s as one of continued expansion of TRIO programs. The Higher Education Act of 1972 created Educational Opportunity Centers. The Council for Opportunity in Education calls the decade of the eighties critical to TRIO programs in that it was building stability for these programs. The reauthorization of the Higher Education Act in 1980 introduced two key concepts for the TRIO programs: first -generation college and prior performance. First-generation in college was added to the low-income criterion in defining the eligibility of students for TRIO programs. This addition is important because the programs shifted toward being more inclusive with regards to looking at the basis and the impact of non-financial barriers to access and success in higher education. Additionally, it allowed TRIO to develop a broader coalition in Congress to include not just those from low-income backgrounds but a

coalition of all the constituents who lacked opportunities for higher education (Council for Opportunity in Education, 2004-2005).

Prior performance refers to extending the life of TRIO programs that have demonstrated effectiveness during a grant cycle. This recognizes that these programs are an integral part of student assistance. This has led to a network of experienced TRIO professionals who are able to address and work for the broader agenda of opportunity in postsecondary education (Council for Opportunity in Education, 2004).

Congress mandated that two-thirds of the students served in TRIO must come from families who meet the federal low-income guidelines. Nearly 873,000 low-income students are being served throughout the United States, of which:

- 37% of TRIO students are whites;
- 37% are black Americans;
- 19% are Hispanics;
- 4% are American Indians/Alaskan Native;
- 4% are Asian-Americans; and,
- 1% are listed as “Other,” including multiracial students.

Additionally, 16,000 students with disabilities and more than 25,000 US military veterans are enrolled in TRIO Programs (Council for Opportunity in Education, 2004).

The fourth and final part, Legislative Authorization of the McNair Scholars Program, will discuss the establishment of the McNair Scholars Program and its purpose. This part will provide the basis for the research purpose for the study.

#### ***Part IV: Legislative Authorization of the McNair Scholars Program***

In response to the need to address the under representation of minority groups in graduate education and obtaining doctoral degrees, the Ronald E. McNair Post-Baccalaureate Achievement Program was authorized by the Higher Education Act Amendments of 1986. The program is authorized to serve low-income and first-generation American students just like the other TRIO programs authorized by Title IV of the Higher Education Act of 1965 and its subsequent amendments (Council for Opportunity in Education, 2004, 2005). According to a US Department of Education, Office of Postsecondary Education report (2002), the McNair program grants funding to institutions of higher education for programs designed to prepare participants for doctoral studies through participation in research and other scholarly activities. The McNair Program is intended for college students who are from disadvantaged backgrounds and are academically talented. Programs at institutions of higher education are required to work closely with McNair participants as they complete undergraduate requirements. Additionally, programs are to participants entrance into graduate programs, and track their progress until they successfully complete advanced degrees. The goal of the McNair Program is to increase the number of Ph.D.s attained by students from underrepresented segments of society (US Department of Education, 2002).

According to the Ronald E. McNair Postbaccalaureate Achievement Program Regulations, 34 CRF 647.4, allowable activities are the following:

- opportunities for research or other scholarly activities at the grantee institution or at graduate centers that are designed to provide participants with effective preparation for doctoral study;
- summer research internships;

- seminars and other educational activities designed to prepare participants for doctoral study;
- tutoring;
- academic counseling;
- assistance to participants in securing admission to and financial assistance for enrollment in graduate programs;
- mentoring programs involving faculty members or students at institutions of higher education, or any combination of faculty members and students; and
- exposure to cultural events and academic programs not usually available to project participants.

The US Department of Education identified these allowable activities based on graduate school practice.

According to the Chronicle of Higher Education (2004), students from underrepresented groups in graduate education (American Indian and Alaskan Native, black American, and Hispanic) comprise 26.0% % of the US population. Yet, underrepresented groups enroll at a rate of 13.7% rate as compared to 69.0% for the majority group (white racial group). Also, Underrepresented students account for 10.8% of the doctoral degrees awarded in contrast to the 79.3% awarded to majority students. Thus, students underrepresented in graduate education are not in careers for which a doctorate is required. The careers most often selected by majority students with doctorate degrees (77.0%) are in academia: professors, deans, department chairs, upper level administrators, and researchers. However, only 18.3% of underrepresented students with doctorate degrees plan to select

careers in higher education. Furthermore, in the physical sciences 16.5% of the doctorate recipients plan to work in educational institutions. A mere 3.3% of 16.5% are students from underrepresented groups. Therefore, it follows that minority groups are underrepresented in higher education career fields (The Chronicle of Higher Education, 2004).

The Kansas State University, the University of Kansas, and Wichita State University McNair Scholar Programs are three of 177 projects funded by the US Department of Education (US Department of Education, 2007). In 1989, the first 14 McNair Programs were funded for a total of \$1,482,000 and 18 years later, the amount has increased to \$41,714,498 for 177 programs. The average award in 1989 was \$105,857, and in 2005, the average award amount had escalated to \$235,155. The average cost per program participant was \$3,571 in 1989, and this escalated to \$9,965 per participant by 2005 (Bell & Bergeron, 2002; US Department of Education, 2007).

In a report by Bell and Bergeron (2002) for the US Department of Education, the authors noted that McNair institutions were asked to indicate which of seven scholarly activities they provided to their students and also the number of students who participated in each activity during the 1998-99-program year. In sum, most of the McNair programs provided internships (99%), academic counseling (98%), seminars (98%), financial assistance (96%), and admission assistance (95%). Bell and Bergeron (2002) additionally found that the activities in which students participated most often were academic counseling (78%), seminars (78%), financial assistance (68%), admission assistance (61%), and summer internships (51%). In a more recent investigation for the US Department of Education, Seburn, Chan, and Kirshstein (2005) reported similar figures regarding the scholarly activities provided to McNair students, with admission assistance increasing from 95%

during the 1998-99 program years to 99% in the 2001-02 program years. In his study of the McNair program at Truman State University in Kirksville, Missouri, Ishiyama (2002) found that program participants were more likely to enroll in graduate school than non-McNair students.

In 1992, the first McNair Scholars Program in Kansas was established at the University of Kansas and was funded to serve 20 students. In 1995, the McNair Scholars Program was established at both Kansas State University and at Wichita State University to serve 20 students each year. All three institutions serve McNair Scholars who are from low income and first-generation college households and/or members of minority groups that are underrepresented in graduate programs and college faculties.

The Kansas State University, University of Kansas, and Wichita State University McNair Scholars Programs are comprehensive programs structured to prepare participants for successful careers as graduate students, professors, and professional researchers (Kansas TRIO Programs, 2006).

To become a McNair Scholar, an undergraduate must be at least a sophomore who has demonstrated potential to be accepted into a graduate school program (earned above-average grade point average and have a declared major). Additionally, prospective McNair Scholars must meet federal guidelines. That is, students must be low-income and first-generation college students or members of an ethnic minority group that is considered underrepresented in graduate programs. A comprehensive program is provided to prepare program participants for successful completion of graduate school and to encourage them to become professors. (Kansas TRIO Programs, 2006).

The following will provide the reader with an overview of each of the three Kansas

McNair programs being examined in this study. This will provide the reader with the funding that the programs receive and the primary services given to McNair scholars.

### ***Overview of the Kansas McNair Programs***

The following is an overview for each of the Kansas McNair Programs as presented in the document, Kansas TRIO Programs (2006):

#### ***Kansas State University***

- FY 06 funding level: \$240,043

Primary Services:

- Summer Research Internships
- Faculty Mentoring
- Counseling
  - Academic
  - Personal
  - Career
  - Financial Aid

GRE preparation

- Graduate School Application Assistance
- Campus and Graduate School Department Visits to assist in the selection of an appropriate graduate school
- Research Conferences

### ***The University of Kansas***

- FY 06 funding level: \$258,469

#### Primary Services:

- Counseling
- Academic
- Financial Aid
- Career
- Academic Skills Enhancement
- Study skills
- Research skills and methods
- Tutoring
- Mentoring from graduate faculty
- Research Internships
- Graduate School Admissions Assistance
- GRE Preparation
- Fellowship application assistance

### ***Wichita State University***

- FY 06 Funding Level: \$240,043

#### Primary Services

- Research participation
- Financial aid assistance for graduate study
- Faculty-led seminars for graduate study preparation

- GRE Preparation
- Support for identifying and applying to graduate study programs
- Tutoring for courses and improvement of writing skills
- Support to present research at national conferences
- Assistance in submitting student research reports for publication in undergraduate journals
- Closing Symposium at the end of the summer program
- Mentoring from distinguished faculty

As the Kansas TRIO Programs (2006) publication indicates, the primary services are similar. Additionally, the three programs provide the maximum of student stipends (\$2,800), which are allowable for the research internships. A major difference is that primary services provided by the Wichita State University McNair Scholars Program include faculty-led seminars for graduate study preparation and a closing Symposium at the end of the summer program. These services are not included in the University of Kansas and Kansas State University McNair Programs. The unique feature of the KU McNair Program is the emphasis on providing study skills assistance to students (Kansas TRIO Programs, 2006).

An overview of the programs nationally is provided to give the reader a fuller picture of the McNair Scholars Program. A US Department of Education (1999, p. 27) report based on the 1995-1996 program year stated the following:

Few projects are exactly alike. The following services are provided in various combinations depending upon the project:

- Tutoring

- Career Counseling
- Personal counseling
- Tuition
- Workshops on financial aid, graduate school exams, and the graduate school process
- Workshops on academic skills and time management
- Seminars on academic topics
- Other program activities include the following:
  - Required research methods seminars/classes
  - Visits to graduate institutions
  - Cultural events
  - Presentation of research projects by program participants
  - Research conferences
  - Opportunity to publish in McNair and other journals
  - Mentoring by a graduate student along with a faculty mentor
  - Summer academic content classes mandatory for program participants

According to the US Department of Education (1999), activities and services common among McNair programs include the following:

- Mentoring by faculty or an outside resource
- A research activity (not necessarily for all participants)
- Participant stipends (not necessarily for all participants); the amount of the stipends varies up to \$2,400

- At least a minimal level of academic advising
- At least some graduate school application guidance or assistance

The US Department of Education (1999) indicated that these common activities and services are basic in making the McNair program unique. Participants in programs that are not provided one or more of these benefits are deprived of at least one critical facet of graduate school preparation. More detail is provided by the US Department of Education on the importance of these benefits as follows.

### **Research and Mentoring**

Research and mentoring are the academic foundation of the McNair Program and are offered in some form (not necessarily to every student). During the Department's site visit of various McNair Programs in 1997, students often indicated that the skills gained through research and mentoring were the most important part of their McNair experience. To clarify, McNair participants usually conduct original research based on advanced laboratory work and/or primary sources of information. This type of research experience provides a realistic view of what graduate work requires. Mentors provide a role model, guidance and resources necessary for successful admission to graduate school and completion of doctoral study (US Department of Education, 1999). "The need for such guidance is amplified for low-income, first-generation, and underrepresented students. The support of a mentor appears important in building a participant's skills and confidence" (US Department of Education, 1999, p. 29). In addition to helping students to conduct research and report results, mentors help students to present their research at conferences. Some mentors even assist students in publishing their research findings in national academic journals and help them establish contacts with faculty at graduate schools.

### **Financial Assistance**

The Department of Education (1999) reports that after research and mentoring, McNair participants cited the stipend as the most important part of the McNair program. Participants indicated to Department site monitors that the stipend afforded them the time and resources to participate in activities otherwise unavailable to them.

### **Advising and Counseling**

In their site visits in 1997, the Department of Education found that nearly all McNair programs provide some type of academic advising or counseling, in many of these programs personal counseling was offered. In addition, many programs used workshops to address advising issues appropriate for group presentation. Academic advising is valuable to McNair participants since grade point average, course planning, and test-taking strategies are critical to graduate school admission (US Department of Education, 1999).

### **Graduate School Application Assistance**

McNair programs normally assist participants in the graduate school application process. This assistance, which includes test taking, application, and applying for financial aid, is almost a requirement for successful graduate school admission. Consequently, this assistance is a vital factor of the McNair program since incoming participants usually have limited knowledge of the complexities of the graduate school process or its connection to planning their own undergraduate course work (US Department of Education, 1999).

The US Department of Education (1999) discovered during its site visits to McNair programs that students and faculty often indicated that more than a summer was needed to complete a serious research project. Some felt that students needed at least one year, if not two years, of research experience. Several McNair Programs have responded by extending

their summer program by a few weeks, while others have students begin their projects in the early spring, and others permit students to continue their research project into the subsequent academic year or a second summer. Conversely, some programs have students complete a research project only during the academic year. The US Department of Education further reports that the disciplines of McNair students include the humanities, social sciences, physical sciences, and engineering. Some McNair programs recruit students from only a select group of fields of study, such as the physical sciences, while others recruit students from across more disciplines (US Department of Education, 1999).

The same report noted that graduate schools across the country recognize the McNair program as an outstanding recruiting resource in their search for diverse academically talented students. To attract McNair students, graduate schools often provide special admissions provisions, tuition waivers, fellowships, and application fee waivers.

## **CHAPTER 3 - Research Method**

### ***Introduction***

The purpose of this research is to investigate the strengths and weaknesses of the McNair Scholars Program as perceived by McNair Scholars alumni who matriculated from Kansas State University (KSU), the University of Kansas (KU), or Wichita State University (WSU) over a nine-year period from 1996 to 2004. This investigation also provides some useful research data on the overall effectiveness of the McNair Scholars program. Although an annual report is completed to reflect how the program has achieved its performance objectives, it does not address the purpose of this study. The information provided here can serve as evidence for the needed financial support for programs such as McNair. Based on a review of the literature, only a limited number of studies that have been conducted regarding the McNair program at other colleges and universities. Specifically, this is the first such study conducted of the KSU, KU, and WSU McNair Scholar Programs. Grimmett, Bliss, and Davis (1998) provide the general rationale for this study as they said "...though some research on the transitions of low-income, first-generation-college, underrepresented minority students from high school is available, the experiences of these students in transition from college to graduate and professional schools have not been sufficiently documented" (p. 406).

### ***Design of the Study***

The design of the study is descriptive and relies on the perceptions of former McNair Scholar alumni about their experiences with the program. Factors that contribute to the

enrollment in and completion of their graduate school education are also examined. The researcher selected a descriptive design because the nature of the research question does not require making generalizations about a sample population.

### ***The Population for the Study***

The population for the study was Kansas State University, the University of Kansas, and Wichita State University McNair Scholar alumni who participated in the program and earned bachelor's degrees between 1996 and 2004. This group of McNair Scholar Alumni was selected because they completed the requirements of the program and could therefore best assess the value of the services that assisted them in preparing for graduate school. Additionally, alumni were selected since they were no longer under the direct influence of the researcher at KSU or the directors at KU, or WSU and would therefore likely be more objective. The 264 McNair alumni who completed the program and graduated from Kansas State University, the University of Kansas, and Wichita State University represent various majors, including business, English, psychology, history, sociology, and education. Of the 264 students, 176 were low-income and first-generation and 88 were classified as underrepresented in higher education based on federal guidelines. McNair alumni from underrepresented groups as defined by the US Department of Education are African American, Hispanic, and American Indian/Alaskan Native. The dates when the McNair alumni were participants in the program are presented in Table 3.1.

As reflected in Table 3.1, the number of McNair alumni graduating fluctuates from year to year. This fluctuation can be attributed to the ability of the program to serve more than 20 students in a particular year because of additional funding. For example, during

1996 and 1997, K-State was able to serve five additional students which resulted in a higher than usual number of graduates in subsequent years. Additionally, this variation can be attributed to the length of time that was required for McNair alumni to complete their program of study.

**Table 3-1: Summary of McNair Scholar Graduates**

Year Graduated	Number of Alumni			Percentage		
	KSU	KU	WSU	KSU	KU	WSU
1996	6	10	12	7.6	10.5	13.3
1997	5	9	13	6.3	9.5	14.4
1998	11	8	14	14.0	8.4	15.6
1999	9	11	10	11.4	11.6	11.1
2000	12	11	15	15.2	11.6	16.7
2001	8	12	7	10.1	12.6	7.8
2002	8	14	8	10.1	14.8	8.9
2003	12	8	5	15.2	8.4	5.5
2004	8	12	6	10.1	12.6	6.7
Totals	79	95	90	100.0	100.0	100.0

***Instrumentation***

The McNair Scholar Alumni Survey has two major parts. The first part consists of questions encompassing six program areas and other program factors that are designed to prepare McNair students for graduate school. The respondents were asked to rate their

graduate school preparation by using a five-point Likert scale to assess the strengths and weaknesses of the McNair Program. Additionally, respondents were asked to indicate whether more, the same, or less emphasis should be placed on each of the program services and activities. Part two of the survey includes questions relating to demographics, such as gender, race, family income, and first-generation status. The second part also consists of questions relating to grade point average, graduation date, other colleges attended, feelings regarding being a McNair Scholar, and how they felt about getting an education.

In Part 1 of the survey, “McNair Program Factors”, McNair Scholar alumni were asked to rate the six components at their respective home institutions—Kansas State University, the University of Kansas, or Wichita State University. These activities and services are in accordance with the Ronald E. McNair Post-baccalaureate Achievement Program Regulations. McNair alumni were also asked to rate other factors relating to their experience in the McNair program. The specific activities and services within each area common among McNair programs are based on the US Department of Education specifications (US Department of Education, 2002). The general and specific program activities and services rated by respondents are as follows:

- Academic Research Workshops
  1. Selecting a research topic
  2. Using the Publication Manual of the American Psychological Association as a guide for preparing research papers or one that is appropriate for the field.
  3. Developing a research proposal
  4. Enhancing understanding of a research library and information retrieval
  5. Enhancing awareness of diversity issues in research

6. Enhancing awareness of diversity issues in graduate school
7. Enhancing understanding of ethical issues in academia and research
- Selecting and Working With a Faculty Mentor
  8. Acquiring an understanding of the characteristics to look for in a faculty mentor
  9. Acquiring an understanding of how to interview prospective faculty mentors
  10. Acquiring an understanding of establishing feedback sessions of the research project with a faculty mentor
  11. Acquiring an understanding of obtaining guidance from faculty mentor relating to career goals and graduate education
  12. Acquiring an understanding from faculty mentor on presenting the research topic
- Graduate Record Examination (GRE) Preparation
  13. Increasing knowledge of standardized tests
  14. Increasing confidence in taking standardized tests
  15. Providing assistance with the vocabulary section
  16. Providing assistance with the quantitative section
  17. Understanding the interpretation and implications of the scores
- The Summer Research Internship
  18. Enhancing ability to write a research abstract
  19. Enhancing ability to conduct a literature review and write citations

20. Enhancing understanding of a research library and information retrieval
  21. Enhancing understanding of conducting research in a laboratory that is field-based or in a setting that is appropriate for your study
- Academic Support Services
    22. Providing tutoring in courses as needed
    23. Providing academic planning and goal setting
    24. Providing support to attend research conferences
    25. Enhancing understanding of the characteristics to look for in a graduate school program
    26. Providing assistance in identifying potential graduate school programs
    27. Providing support for campus visits to select an appropriate graduate school program
  - Enrollment in Graduate Program Leading to a Doctorate
    28. Providing assistance with the graduate school application process
    29. Providing assistance with obtaining financial resources for graduate school
    30. Enhancing knowledge of a graduate program in your field of interest

The “Other Program Factors” rated by respondents are as follows:

31. Availability of faculty mentor
32. Assistance from faculty mentor
33. The amount of the stipend provided during the Summer Research Internship

In Part 2 of the survey, “Demographic Information”, McNair Scholar alumni were asked to respond to a series of demographic questions that focused on such demographics as gender, race/ethnicity, first-generation status, family income, grade point average, other

colleges attended, and academic major. The race/ethnicity question asked alumni to clearly identify both race and ethnicity. This was especially important for Hispanic respondents since Hispanics are represented in the ethnic group category and may be of any race. Other questions asked alumni to indicate how they felt about getting an education prior to and after earning a bachelor's degree and their date of graduation. At the conclusion of the survey, respondents were given the opportunity to write their comments regarding the McNair Scholars Program components.

To ensure reliability and validity of the instrument, a pre-test was conducted with 20 current McNair program seniors from Kansas State University, Wichita State University, and the University of Kansas in April 2005. These students were asked to respond to several questions regarding the quality of the instrument based on *Your Opinion Please! How to Build the Best Surveys in the Field of Education* (Cox, 1996).

The feedback from this assessment was used to make revisions to ensure clarity and the apparent validity of the instrument.

### ***Data Collection***

The initial contact information for McNair alumni was obtained from program records at each institution; for 259 of the 264 alumni there was valid contact information. Five alumni were eliminated from the sample because contact information was not available.

To obtain the maximum response rate, information was collected based on Dillman's (2000) system of contacts:

- A pre-notice letter was sent to participants to notify them that they would be receiving a request to help with an important study within a week

- Appendix A).
- The survey (Appendix C) along with a detailed cover letter (Appendix B) explaining the importance of responding was sent to the participants. This mailing included a self-addressed, stamped envelope.
- A thank you postcard a few days to a week after sending the survey was sent to McNair alumni whether or not they had returned the survey (Appendix D).
- A replacement survey and a self-addressed, stamped envelope were sent to those who did not respond within 2-4 weeks after the first survey was mailed.

### *Data Analysis*

Analysis of the data followed the classical model—from simple to more complex. To that end, simple frequency distributions of the data were first examined. The univariate analysis gave way to bivariate analyses that involved simple cross tabulations and t-tests for differences between means.

The reliability of the scaled measures were tested using Cronbach's alpha reliability coefficient. The multivariate measure used was analysis of variance (ANOVA), and in cases where there was a significant finding, post-hoc tests were conducted. T-tests and ANOVA were also used to investigate differences in McNair alumni perceptions of the strengths and weaknesses of McNair program factors. The program services and activities within the seven general categories were rated on the following scale: (a) 5 = Definitely a Strength, (b) 4 = More of a Strength Than Not (c) 3 = Neither a strength nor a Weakness, (d) 2 = More of a Weakness Than a Strength, (e) 1 = Definitely a Weakness, and (f) 0 = Not Applicable. All analysis of the data was performed using SPSS Version 13 (SPSS, 2006).

### ***Protection of Human Rights***

The researcher took the necessary steps to ensure the confidentiality and protection of all of the participants' information by following K-State guidelines.

## **CHAPTER 4 - Results**

### ***Survey Administration and Response Rate***

The McNair Scholars Program survey was administered to former McNair Scholar participants. In fact, to be eligible to participate in the study the respondent had to have been an alumnus of either the Kansas State University (KSU), The University of Kansas (KU), or Wichita State University (WSU) McNair programs. Unfortunately, contact information was not available for 5 of the 264 former McNair Scholars, so the final number eligible for the study was 259 participants. The survey elicited responses relating to which program factors (services and activities) were perceived to be strengths and weaknesses by McNair alumni. Additionally, the survey elicited responses on how the demographics related to program perceptions. Most of the respondents were from the State of Kansas and all attended their respective institutions between 1996 and 2004.

### ***Data Collection Process***

After completing the requirements of the Committee for Research Involving Human Subjects at Kansas State University, the project was approved and permission was granted to conduct the survey July 14, 2005. The first mailing was on July 15, 2005, when a brief letter introducing the survey was sent to the home addresses of the participants by the program directors. This was followed by a July 23<sup>rd</sup> mailing of the survey and a detailed cover letter. Table 4.1 provides a review of the results of the mailing process. As indicated in Chapter 3, Dillman's (2000) system of contacts was used to obtain a maximum response rate. This system is based on the premise that multiple contacts to each potential respondent will result

in a higher response rate. Accordingly, four contacts were made to McNair Scholar alumni. These contacts yielded a response rate of 53.0% by October 31<sup>st</sup> of 2005 as shown in Table 4.1. The response rate of 53.0% is a good sampling of the population for the purposes of this study since it represents more than half of the McNair alumni where contact by mail was attempted. The rate of return could have been higher but 17 (6.0%) of the surveys were returned by the U.S. Postal Service as undeliverable. Additionally, attempting to contact as many of the non-respondents as possible by telephone may have yielded a higher response rate.

**Table 4-1: Survey Return Results**

Survey Status	N	%
Total surveys mailed	259	100.0
Completed surveys received as of 10/31/05	137	53.0
Blank surveys returned	5	2.0
Returned surveys as undeliverable	17	6.0
Surveys accounted for	159	61.0
Surveys unaccounted for as of 10/31/05	100	39.0

***Survey Administration and Response Rate by Institution***

Table 4.2 compares the survey return results by institution, indicating that the greatest number of surveys was mailed to KU subjects (95) and the fewest were sent to KSU McNair alumni (79). However, KSU had the highest return rate at 57.0% as compared to 48.0% for KU and 54.0% for WSU. The higher rate of return for KSU can possibly be attributed to the fact that the researcher is the director of the McNair Scholars Program at this institution. The

number of surveys that were returned as undeliverable was virtually the same among the three institutions.

**Table 4-2: Survey Return Results by Institution**

Status of Mailed Surveys	KSU		KU		WSU		Total	
	N	(%)	N	(%)	N	(%)	N	(%)
Total surveys mailed	79		95		85		259	
Completed surveys received as of 10/31/05	45	(57.0)	46	(48.0)	46	(54.0)	137	(53.0)
Blank surveys received	1	(1.0)	2	(2.0)	2	(2.0)	5	(2.0)
Returned surveys as undeliverable	5	(6.0)	6	(6.0)	6	(7.0)	17	(7.0)
Surveys accounted for	51	(65.0)	54	(57.0)	54	(64.0)	159	(61.0)
Surveys unaccounted for as of 10/31/05	28	(35.0)	41	(43.0)	31	(36.0)	100	(39.0)

### ***Demographics of Respondents***

A critical aspect of this study is to provide clear demographic descriptions of the population studied. To that end the researcher decided to examine in detail the specific demographic elements as they relate to the research questions first raised in Chapter One. This examination will allow readers to develop a greater understanding of the importance of demographics to this population—one composed of often socially and economically disadvantaged individuals.

### ***Distribution of Respondents by Gender, Race, and Ethnicity for McNair Scholar***

#### ***Alumni***

The completed surveys provide demographic data regarding the number and percentage of respondents based on gender, race and ethnicity as displayed in Table 4.3.

First, more than twice as many females responded (66.0%) as males (31.0%); however, 3.0% of the McNair alumni did not record their gender. Additionally, the largest racial group who responded to the survey was white/Caucasian (35.0%) followed by black/African/American (29.0%) and multi racial (15.0%). With regards to ethnicity, most respondents identified themselves as Non-Hispanics (69.0%). Finally, only 3.0% of the respondents indicated that they were of Hispanic-Origins not in Mexico, while 17.0% indicated they were of Hispanic-Origins in Mexico.

### ***Distribution of Respondents by First-generation College Status for McNair Scholar***

#### ***Alumni***

Demographic data were provided through responses about whether or not the respondent was the first in the family to graduate from college. Being a first-generation college student is part of the eligibility criteria for the McNair Scholars Program. Table 4.4 displays this information. About one-quarter (24.0%) of the respondents' parents earned a four-year college degree as compared to almost three-quarters (72.0%) whose parents did not.

**Table 4-3: Distribution of Respondents by Gender, Race, and Ethnicity**

Group	Respondents (N = 137) N	%
<sup>a</sup> Gender		
Males	42	31.0
Females	91	66.0
<sup>b</sup> Race		
Black/African American	40	29.0
Asian American	7	5.0
American Indian/Alaskan Native	8	6.0
Pacific Islander	1	1.0
White/Caucasian	48	35.0
Multi-racial	20	15.0
<sup>c</sup> Ethnicity		
Non-Hispanic	94	69.0
Hispanic – Origins in Mexico	24	17.0
Hispanic – Origins not in Mexico	4	3.0

*Note.* Thirty-two of 137 (23.0%) McNair alumni did not record their gender, race or ethnicity. <sup>a</sup>Four of 137 (3.0%) alumni did not record their gender. <sup>b</sup>Thirteen of 124 (9.0%) alumni did not record their race. <sup>c</sup>Fifteen of 137 (11.0%) alumni did not record their ethnicity.

**Table 4-4: Distribution of Respondents by First-generation College Status**

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College education of parents	N	%
Received a four-year degree	33	24.0
Did not receive a four-year degree	99	72.0
No response	5	4.0
Total	137	100.0

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***Distribution of Respondents by Family Income***

The influence of family income on program participation is examined in Table 4.5. According to the information presented in Table 4.5, most of the respondents (59.0%) were from families whose yearly income was less than \$29,999. A relatively high rate (21.0%) of respondents indicated that they were from families who had incomes at the lowest level, less than \$9,999. In contrast, only 5.0% indicated that they were from families who earned more than \$70,000 and most of these respondents were from families where at least one parent was college educated.

**Table 4-5: Distribution of Respondents by Family Income**

Income Level (N = 137)	N	%
\$0 – 9,999	29	21.0
10,000 – 19,999	25	18.0
20,000 – 29,999	27	20.0
30,000 – 39,999	15	11.0
40,000 – 49,999	10	7.0
50,000 – 59,999	11	8.0
60,000 – 69,999	4	3.0
70,000 – 79,999	1	<1.0
80,000 – 89,999 <sup>a</sup>	—	—
90,000 – 99,999	1	<1.0
100,000 or more	2	1.0
Not sure	8	6.0
No response	4	3.0

<sup>a</sup>The dash represents data not obtained.

### ***Distribution of Respondents by GPA***

Table 4.6 documents the distribution of the respondents' overall and their major GPAs, which could range from 0.00 to 4.00. Although the McNair programs in Kansas require a GPA of 2.50 or higher for entry, there are times when exceptional life events can cause student performance to falter: such exceptions were found among 1.5% of the students

in this study (see Table 4.6 for detail about overall GPAs). Most of the respondents' overall and their major field GPAs fell between 3.50 and 3.99. This was expected because of the academic nature and purpose of the McNair Scholars Program. Approximately 92.0% of all respondents recorded overall GPAs at or above a 3.00, with most having a GPA of 3.50 or higher. Additionally, at least 89.0% of all respondents recorded major GPAs at or above a 3.00, 5.8% indicated that they achieved perfect overall GPAs of 4.00, and (12.4%) indicated that they achieved a perfect major GPA of 4.00.

**Table 4-6: Distribution of Respondents by GPA**

GPA Item (N = 137)	Overall		Major Field	
	N	%	N	%
0.00 – 1.99 <sup>a</sup>	—	—	—	—
2.00 – 2.49	2	1.5	6	4.4
2.50 – 2.99	6	4.4	3	2.2
3.00 – 3.49	50	36.5	28	20.4
3.50 – 3.99	68	49.6	77	56.2
4.00	8	5.8	17	12.4
No response	3	2.2	6	4.4

<sup>a</sup>The dash represents data not obtained.

***Distribution of Respondents by Transfer Hours from Other Colleges***

The number of respondents who attended other colleges prior to participating in the McNair Scholars Program is depicted in Table 4.7. This data reveals that most students (57.0%) had some college transfer hours with the modal number of transfer hours being between 11 and 20 (18.0%).

**Table 4-7 : Distribution of Responses by Transfers From Other Colleges**

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Transfer Hours	N	%
1 to 10	23	17
11 to 20	24	18
21 to 30	6	4
31 to 40	7	5
41 to 50	3	2
51 to 60	15	11
Total	78	57

---

*Note.* Fifty-nine of the 137 (43.0%) respondents did not report transfer hours.

***Distribution of Respondents by Major Field***

The researcher obtained information about the respondents' undergraduate major fields as shown in Table 4.8, by asking students to select from one of the 11 major fields listed. Social sciences was the most popular area of study (28.0%) followed by the "Other" major field category at 15.0%. Next, natural sciences was the major field of study for 10% of the respondents.

**Table 4-8: Distribution of Respondents by Major Field of Study**

Undergraduate Major Field	N	%
Business	9	7.0
Education	13	9.0
Human Ecology	3	2.0
Engineering	8	6.0
Computer Science	2	1.0
Physical Sciences	8	6.0
Natural Sciences	14	10.0
Social Sciences	38	28.0
Humanities	12	9.0
English	5	4.0
Other	21	15.0
No response	4	3.0
Total	137	100.0

***Perception of What Being a McNair Scholar Means***

Participation in an academically prestigious and selective program is an important distinction made by McNair programs. In order to address this issue, respondents were asked to indicate which of the categories listed best describes how they felt about being a McNair Scholar (see Table 4.9). A majority of the respondents (38.6) indicated “Accomplishment/Achievement” best described how they felt about being a McNair Scholar. This was followed by “Being a prospective graduate student” (24.8%). These findings were consistent

with the mission of the McNair Scholars Program. Apparently, the respondents do not associate “Recognition for being a good student” and “Being a prospective college faculty member” with the McNair Scholars Program despite the fact that one of the ancillary goals of the program is to produce more credentialed professionals who might elect to return to higher education communities.

**Table 4-9: Perception of What Being a McNair Scholar Means**

Category	N	%
Accomplishment/Achievement	53	38.6
Recognition for being a good student	10	7.3
Being a prospective graduate student	34	24.8
Being a prospective college faculty member	10	7.3
Being a part of an elite group	15	11.0
Non respondents	15	11.0

***Attitudes Toward a College Education Among McNair Scholars Alumni***

The general attitude of McNair Scholars Alumni toward a college education is displayed in Table 4.10. The data reveal that in general, the alumni felt apprehensive prior to *earning* a degree (17.0%); however, that declined to just 13% after the degree was conferred. The largest increase occurred in terms of confidence where approximately 35.0% of the respondents indicated that they felt confident prior to earning a degree, and that number increased to 55.0% after respondents earned a degree.

**Table 4-10: Attitudes Toward a College Education for McNair Scholar Alumni**

Perception or Feeling Towards College/Higher Education	Prior to earning a degree		After a degree	
	N	%	N	%
Apprehensive	23	17.0	18	13.0
Confident	49	35.0	76	55.0
Not sure	17	12.0	7	5.0
Education is necessary to achieve my goals	98	71.0	87	63.0
Education is not necessary to achieve my Goals	3	2.0	2	1.0

*Note.* The number of the responses exceeds 137 since participants were asked to make more than one selection as appropriate.

### ***Attitudes Toward a College Education Among McNair Scholars Alumni***

#### ***Controlling for Gender***

Table 4.11 illustrates how participants, based on gender, responded to questions about their feelings towards a college education. According to the data in Table 4.11, both males and females recorded that “Education is necessary to achieve my goals” at much higher rates than the other items about how they felt about getting an education prior to and after earning a bachelor’s degree. Conversely, both males and females recorded that “Education is not necessary to help me achieve my goals” at much lower rates than the other categories prior to and after earning a bachelor’s degree. In particular, males indicated that they were feeling slightly more “Apprehensive” than females about getting an education prior to and after earning a bachelor’s degree. As expected, both males and females indicated that they were less “Apprehensive” about getting an education after earning a bachelor’s degree.

**Table 4-11: Attitudes Toward a College Education Among McNair Scholars Alumni Controlling for Gender**

Survey Item	Prior to College Degree Gender				After College Degree Gender			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Apprehensive	8	19.0	16	18.0	6	14.0	12	13.0
Confident	14	33.0	31	34.0	21	50.0	52	57.0
Not sure	7	17.0	10	11.0	3	7.0	4	4.0
Education is Necessary	26	62.0	69	76.0	22	52.0	60	66.0
Education is not Necessary	2	5.0	1	1.0	1	2.0	1	1.0

*Note.* The total number of responses exceeds 137 since participants were asked to make more than one selection as appropriate.

***Attitudes Toward a College Education Among McNair Scholar Alumni Controlling for Race and Ethnicity Prior to Earning a College Degree***

Table 4.12 illustrates the responses recorded by racial and ethnic groups regarding their feelings towards obtaining a college education prior to earning a college degree. Since the number is too small to produce any meaningful data for the Asian American, American Indian/Alaska Native, and Pacific Islander racial categories, they have been grouped together as Asian, Native, and Pacific Islander. All of the racial and ethnic groups indicated that “Education is necessary to help me achieve my goals” best describes how they felt about getting an education prior to earning a college degree.

**Table 4-12: Attitudes Toward a College Education Among McNair Scholar Alumni Controlling for Race and Ethnicity Prior to Earning a College Degree**

Attitudes	Blacks (n = 40)	Asian, Native, Pacific Islanders <sup>a</sup> (n = 16)	Whites (n = 48)	Multi- racial (n = 20)	Non- Hispanic <sup>b</sup> (n = 94)	Hispanic —in Mexico (n = 24)	Hispanic —not in Mexico (n = 4)
Apprehensive	5 (13.0)	2 (13.0)	8 (17.0)	6 (30.0)	15 (16.0)	8 (33.0)	0
Confident	14 (35.0)	5 (33.0)	17 (35.0)	8 (40.0)	32 (34.0)	9 (38.0)	2 (50.0)
Not sure	4 (10.0)	2 (13.0)	5 (10.0)	6 (30.0)	9 (10.0)	4 (17.0)	0
Education is necessary to help me achieve my goals	31 (78.0)	11 (73.0)	36 (75.0)	12 (60.0)	71 (76.0)	17 (71.0)	3 (75.0)
Education is not necessary to help me achieve my goals	1 (3.0)	0	1 (2.0)	1 (5.0)	2 (2.0)	1 (4.0)	0

<sup>a</sup>There were 15 of 16 Asian, Native and Pacific Islanders who responded. <sup>b</sup>There were 93 of 94 Non-Hispanics who responded.

***Attitudes Toward a College Education Among McNair Scholar Alumni Controlling for Race and Ethnicity After Earning a College Degree***

Table 4.13 illustrates the responses recorded by racial and ethnic groups regarding their feelings towards obtaining a college education after earning a college degree. As expected, the attitudes of McNair alumni changed about getting an education. All of the McNair alumni within each of the racial and ethnic groups indicated that they were more “Confident” about getting an education after earning a college degree than before their graduation.

**Table 4-13: Attitudes Toward a College Education Among McNair Scholar Alumni Controlling for Race and Ethnicity After Earning a College Degree**

Attitudes	Blacks (n = 40)	Asian, Native, Pacific Islanders <sup>a</sup> (n = 16)	Whites (n = 47)	Multi- racial (n = 20)	Non- Hispanic <sup>b</sup> (n = 94)	Hispanic —in Mexico (n = 24)	Hispanic —not in Mexico (n = 4)
Apprehensive	3 (8.0)	3 (19.0)	7 (15.0)	4 (25.0)	14 (15.0)	2 (8.0)	0
Confident	20 (50.0)	11 (69.0)	25 (53.0)	12 (60.0)	49 (53.0)	18 (75.0)	2 (50.0)
Not sure	3 (8.0)	1 (7.0)	2 (4.0)	1 (5.0)	4 (4.0)	1 (4.0)	0
Education is necessary to help me achieve my goals	27 (68.0)	5 (33.0)	31 (66.0)	15 (75.0)	57 (61.0)	18 (75.0)	3 (75.0)
Education is not necessary to help me achieve my goals	1 (3.0)	0	0	1 (5.0)	2 (2.0)	0	0

<sup>a</sup>There were 15 of 16 Asian, Native and Pacific Islanders who responded. <sup>b</sup>There were 93 of 94 Non-Hispanics who responded.

### ***Other Demographic Data***

The demographic data collected for the last four survey questions were not sufficient for any kind of useful analysis.

### ***Reliability of Scaled Measures of Selective Constructs of McNair Scholars Program Purposes***

Table 4.14 displays a reliability matrix of the final survey questions by category and alpha level. In the present investigation, Cronbach’s alpha standard measure of reliability was produced for each major area covered in the McNair Scholars Programs in Kansas. The

global domain consisted of three to seven questions for each major area and was measured using scaled items that indicated (5) Definitely a Strength (4) More of a Strength Than Not (3) Neither a Strength nor a Weakness (2) More of a Weakness and (1) Definitely a Weakness. The mean scores for the seven major program components (scaled measures) were found by adding the scores recorded by McNair alumni and dividing by the total number of scores.

**Table 4-14: Reliability of Scaled Measures of Selective Constructs of McNair Scholar Purposes**

Scaled Measures	$\alpha$
1. Academic Research (7)	.81**
2. Faculty Mentor (5)	.88**
3. GRE Preparation (5)	.97*
4. Summer Research Internship (4)	.93*
5. Academic Support Services (6)	.85**
6. Enrollment in a Graduate School Program Leading to a Doctorate Degree (3)	.92**
7. Other Program Factors (3)	.77

*Note.* The numbers in parenthesis are the number of scaled items used for each major area.

\* $p < .05$  \*\* $p < .01$

The Cronbach alpha scores for the following all fall within standard statistical acceptance ranges for reliability measures (Hinkle, Wiesma, & Jurs, 1998): GRE Preparation, Summer Research Internship, and Enrollment in a Graduate School Program Leading to a Doctorate Degree (.90 - .99), Faculty Mentor , Academic Support Services , and Academic Research (.80 - .89), and Other Program Factors (.70 - .79).

### ***Data Analysis by Groups for Program Services and Activities***

In addition to the demographic data collected, data were analyzed to determine the mean differences for all McNair alumni. Specifically, the data were analyzed to examine the differences between gender, racial, and ethnic groups perceptions of the McNair Scholar Program services and activities.

### ***Mean and Standard Deviation for Program Services and Activities by All McNair Alumni***

In Table 4.15, the mean and standard deviation scores for the major program components by all participants are displayed. In the same table, the “Other Program Factors” survey item received the highest overall ranking score ( $M = 4.00$ ,  $SD = 1.17$ ), which includes the availability of and assistance from a faculty mentor and the amount of stipend provided. “Academic Support Services” received the next highest overall ranking score ( $M = 3.73$ ,  $SD = 1.16$ ). This includes tutoring, academic planning, and goal setting, research conferences, and campus visits to potential graduate schools. “Enrollment in a Graduate School Program Leading to a Doctorate Degree” received the lowest overall ranking score ( $M = 3.35$ ,  $SD = 1.63$ ). This survey item included “Assisting with the graduate school application process”, “Obtaining financial resources for graduate school” and “Enhancing knowledge of a Graduate Program.” Each of the means is above the 3.0 midpoint of “Neither a Strength nor a Weakness” on the 5-point Likert scale indicating that the services offered by KSU, KU, and WSU are more of a strength than a weakness.

**Table 4-15: Reported Mean and Standard Deviation Scores for Participation in McNair Scholar Program Services and Activities**

Program Components	Mean	SD
Academic Research Workshops	3.54	1.04
Faculty Mentor	3.44	1.10
GRE Preparation	3.65	1.63
Summer Research Internship	3.72	1.19
Academic Support Services	3.70	1.16
Enrollment in a Graduate School Program Leading to a Doctorate Degree	3.35	1.63
Other Program Factors	4.00	1.17

***Mean, Standard Deviation, and t-tests Scores for Program Measures Among McNair Scholar Alumni by Gender***

To distinguish any differences between females and males in the perceptions regarding the strengths and weaknesses of the McNair Scholars Program, Table 4.16 reports the mean, standard deviation and t-tests scores between females and males. The use of t-tests is appropriate since there are only two groups. The mean scores for the program components were found by adding the scores recorded by McNair alumni and dividing by the total number of scores.

The highest mean score recorded by both females ( $M = 3.90$ ,  $SD = 1.90$ ) and males ( $M = 4.20$ ,  $SD = .716$ ) was for “Other Program Factors.” The lowest mean score was recorded by males ( $M = 3.07$ ,  $SD = 1.58$ ) for “GRE Preparation.” The Nonetheless, this and the other reported mean scores are above the 3.0 midpoint of “Neither a Strength nor a

Weakness” on the 5 point Likert scale. Consequently, the mean comparison of program services and activities suggests a positive perception of the McNair Program services and activities. The t-tests yielded a statistically significant difference between females and males in their perception of the strengths and weaknesses of “GRE Preparation.”

**Table 4-16: Mean, Standard Deviation, and t-test by Gender**

Program Component	Females (N=91)		Males (N = 42)		t-test
	Mean	S.D.	Mean	S.D.	
Academic Research Workshops	3.60 (n = 90)	1.03	3.50 (n = 42)	1.10	-0.550
Selecting and Working With a Faculty Mentor	3.50 (n = 89)	1.09	3.39 (n = 42)	1.15	-0.511
GRE Preparation	3.67 (n = 87)	1.60	3.07 (n = 40)	1.58	-1.988*
The Summer Research Internship	3.65 (n = 91)	1.46	3.64 (n = 42)	1.32	0.010
Academic Support Services	3.74 (n = 89)	1.78	3.75 (n = 41)	1.01	0.067
Enrollment in a Graduate School Program Leading to a Doctorate Degree	3.30 (n = 90)	1.76	3.63 (n = 40)	1.14	1.242
Other Program Factors	3.90 (n = 91)	1.31	4.20 (n = 39)	.716	1.612

*Note.* The value enclosed in parentheses equals the number who recorded a response.

\* $p < .05$  (two tailed).

### ***Mean and Standard Deviation for Selected Program Measures by Race and Ethnicity***

Table 4.17 illustrates the mean and standard deviation scores recorded by race and ethnicity for the McNair Scholars Program services and activities. The highest mean scores recorded by racial groups are as follows:

- “Blacks” (M = 4.15, SD = 1.17) for “Other Program Factors”
- “Asian, Native, Pacific Islander” (M = 4.03, SD = 1.24) for “GRE Prep”
- “Whites” (M = 3.90, SD = 1.16) for “Other Program Factors”
- “Multi-racial” (M = 4.00, SD = 0.81) for “Academic Support Services”

The lowest mean scores recorded by racial groups are as follows:

- “Blacks” (M = 3.46, SD = 1.52) for “GRE Prep”
- “Asian, Native, Pacific Islander” (M = 3.51, SD = 1.42) for “Selecting and Working With a Faculty Mentor”
- “Whites” (M = 2.90, SD = 1.16) for “Enrollment in a Graduate School Leading to a Doctorate”
- “Multi-racial” (M = 3.01, SD = 1.89) for “GRE Prep”

The highest mean scores recorded by ethnic groups are as follows:

- “Non-Hispanic” (M = 4.00, SD = 1.08) for “Other Program Factors”
- “Hispanic-in Mexico” (M = 4.07, SD = 0.83) for “Academic Support Services”
- “Hispanic-not in Mexico” (M = 4.79, 0.32) for “Academic Support Services”

The lowest mean scores recorded by ethnic groups are as follows:

- “Non-Hispanic” (M = 3.28, SD = 1.66) for “Enrollment in a Graduate School Leading to a Doctorate”

- “Hispanic- in Mexico” (M = 3.15, SD = 1.60) for “GRE Prep”
- “Hispanic-not in Mexico” (M = 3.60, SD = 2.41) for “GRE Prep”

**Table 4-17: Mean and Standard Deviation by Race and Ethnicity**

<i>Program Components</i>	<i>Black</i> ( <i>n</i> = 40)	<i>Asian, Native, Pacific Islander</i> ( <i>n</i> = 16)	<i>Whites</i> ( <i>n</i> = 47)	<i>Multi-Racial</i> ( <i>n</i> = 20)	<i>Non-Hispanic</i> ( <i>n</i> = 95)	<i>Hispanic— in Mexico</i> ( <i>n</i> = 24)	<i>Hispanic-- not in Mexico</i> ( <i>n</i> = 4)
<i>Academic Research Workshop</i>	3.80 (0.87) ( <i>n</i> = 40)	3.72 (1.08) ( <i>n</i> = 16)	3.23 (1.18) ( <i>n</i> = 47)	3.58 (0.93) ( <i>n</i> = 20)	3.55 (1.01) ( <i>n</i> = 93)	3.31 (1.20) ( <i>n</i> = 24)	4.07 (0.474) ( <i>n</i> = 4)
<i>Selecting and Working with Faculty Mentor</i>	3.81 (0.89) ( <i>n</i> = 37)	3.51 (1.42) ( <i>n</i> = 16)	3.20 (1.06) ( <i>n</i> = 46)	3.38 (1.14) ( <i>n</i> = 20)	3.49 (1.01) ( <i>n</i> = 90)	3.32 (1.38) ( <i>n</i> = 24)	4.00 (0.85) ( <i>n</i> = 4)
<i>GRE Prep</i>	3.46 (1.52) ( <i>n</i> = 38)	4.03 (1.24) ( <i>n</i> = 13)	3.55 (1.62) ( <i>n</i> = 47)	3.01 (1.89) ( <i>n</i> = 20)	3.49 (1.62) ( <i>n</i> = 91)	3.44 (1.64) ( <i>n</i> = 24)	3.60 (2.41) ( <i>n</i> = 4)
<i>Summer Research Internship</i>	3.72 (1.51) ( <i>n</i> = 40)	4.04 (1.19) ( <i>n</i> = 16)	3.60 (1.23) ( <i>n</i> = 48)	3.13 (1.72) ( <i>n</i> = 20)	3.72 (1.32) ( <i>n</i> = 94)	3.15 (1.60) ( <i>n</i> = 24)	4.75 (0.20) ( <i>n</i> = 4)
<i>Academic Support Services</i>	4.07 (0.84) ( <i>n</i> = 37)	3.57 (1.26) ( <i>n</i> = 16)	3.25 (1.32) ( <i>n</i> = 48)	4.00 (0.81) ( <i>n</i> = 20)	3.63 (1.11) ( <i>n</i> = 92)	4.07 (0.83) ( <i>n</i> = 24)	4.79 (0.32) ( <i>n</i> = 4)
<i>Enrollment in a Graduate School Leading to a Doctorate</i>	3.49 (1.62) ( <i>n</i> = 38)	3.78 (1.67) ( <i>n</i> = 15)	2.90 (1.74) ( <i>n</i> = 48)	3.65 (1.28) ( <i>n</i> = 20)	3.28 (1.66) ( <i>n</i> = 93)	3.83 (1.31) ( <i>n</i> = 24)	3.75 (1.64) ( <i>n</i> = 4)
<i>Other Program Factors</i>	4.15 (1.17) ( <i>n</i> = 38)	3.84 (1.44) ( <i>n</i> = 15)	3.90 (1.16) ( <i>n</i> = 48)	3.75 (1.19) ( <i>n</i> = 20)	4.00 (1.08) ( <i>n</i> = 92)	3.92 (1.43) ( <i>n</i> = 24)	4.50 (0.33) ( <i>n</i> = 4)

*Note.* Fourteen of the 137 McNair alumni did not record their racial or ethnic affiliation.

The first value enclosed in parentheses equals the total number of respondents. The second value equals the standard deviation. The third value equals the number who recorded a response.

***Mean Differences for Selected Program Measures Among McNair Scholar Alumni Controlling for Race***

Table 4.18 displays the ANOVA results by race for each of the McNair program components. The ANOVA yielded a statistically significant difference for one of the seven program services and activities, “Academic Support Services.” The Bonferroni post-hoc tests were used to identify where the differences are among groups. Consequently, the post-hoc tests yielded significant differences among black and white McNair alumni in their perception of the strengths and weaknesses of “Academic Support Services” at the .05 alpha level.

**Table 4-18: Mean Differences for Program Measures Among McNair Scholar Alumni Controlling for Race**

Group ANOVA (N = 137)	SS	<sup>a</sup> df	MS	F	P
Academic Research Workshops	7.833	3, 119	2.611	2.443	.067
Selecting and Working With a Faculty Mentor	7.59	3, 115	2.531	2.184	.094
GRE Preparation	8.569	3, 117	2.856	1.114	.346
Summer Research Internship	8.278	3, 120	2.759	1.395	.248
Academic Support Services	16.643	3, 117	5.448	4.540	.005*
Enrollment in a Graduate School Leading to a Doctorate Degree	15.070	3, 117	5.023	1.892	.135
Other Program Factors	2.580	3, 117	.860	.596	.619

<sup>a</sup>The first number equals “Between Groups”. The second number equals “Within Groups”.

\*p <.05

***Mean Differences for Selected Program Measures Among McNair Scholar Alumni Controlling for Ethnicity***

Table 4.19 displays the ANOVA results by ethnicity for each of the McNair program components, which investigated the mean differences in perception based on ethnicity. A summary of results for each survey item is presented. The ANOVA yielded statistically significant differences for two of the seven program services and activities. However, the Bonferroni post-hoc tests did not yield any specific statistically significant differences among ethnic groups in their perception of the program services and activities.

**Table 4-19: Mean Differences for Program Measures Among McNair Scholar Alumni Controlling for Ethnicity**

Group ANOVA (137)	SS	<sup>a</sup> df	MS	F	p
Academic Research Workshops	2.371	2, 118	1.186	1.089	.340
Selecting and Working With a Faculty Mentor	1.727	2, 115	.863	.723	.488
GRE Preparation	.098	2, 116	.049	.018	.982
Summer Research Internship	11.442	2, 119	5.721	3.080	.050*
Academic Support Services	8.015	2, 117	4.007	3.49	.034*
Enrollment in a Graduate School Leading to a Doctorate Degree	6.426	2, 118	3.213	1.264	.286
Other Program Factors	1.167	2, 117	.583	.448	..640

<sup>a</sup>The first number = “Between Groups”. The second number equals “Within Groups”.

\* $p < .05$

***Mean and Standard Deviation Scores for McNair Scholar Alumni by Higher Education Institution Attended***

For data on alumni perceptions of the McNair Scholars Program at the three higher education institutions in Kansas, a summary of the mean and standard deviation scores for each of the program components is provided by institution in Table 4.20. Significantly, the reported mean scores are above the 3.0 midpoint of “Neither a Strength nor a Weakness” on the 5-point Likert scale for all seven components. Additionally, the mean comparison of program services and activities suggests a positive perception of the McNair Program services and activities.

**Table 4-20: Mean and Standard Deviation for Institutions**

Program Components	KSU		KU		WSU	
	(n = 45)		(n = 46)		(n = 46)	
	M	SD	M	SD	M	SD
Academic Research Workshop	3.69	.826	3.67	.863	3.30	1.34
Selecting and Working With a Faculty Mentor	3.33	.987	3.29	.977	3.40	1.18
GRE Preparation	3.69	1.41	3.55	1.58	3.08	1.84
The Summer Research Internship	3.92	1.00	3.75	1.181	3.30	1.84
Academic Support Services	3.28	1.64	3.60	1.46	3.70	1.33
Enrollment in a Graduate School Program Leading to a Doctorate Degree	3.65	1.48	3.31	1.67	3.23	1.74
Other Program Factors	3.83	1.27	4.05	1.12	4.13	1.09

***Mean Differences Across Program Measures Among McNair Scholar Alumni Controlling for Institutional Affiliation***

The ANOVA results in Table 4.21 did not yield any statistically significant differences among the institutions with regard to the survey items. The ANOVA results confirmed the similar perceptions of the strengths and weaknesses of the McNair program components held by alumni from KSU, KU, and WSU.

**Table 4-21: ANOVA Results by Institution**

Group ANOVA (n = 137)	SS	<sup>a</sup> df	MS	F	<i>p</i>
Academic Research Workshops	4.285	2, 133	2.142	1.992	.140
Selecting and Working With a Faculty Mentor	1.912	2,132	.956	.794	.454
GRE Preparation	8.741	2,128	4.370	1.667	.193
Summer Research Internship	7.251	2,135	2.417	.990	.971
Academic Support Services	380	2,131	.190	.139	.870
Enrollment in a Graduate School Leading to a Doctorate Degree	4.531	2,133	2.265	.850	.430
Other Program Factors	2.214	2,130	1.107	.815	.445

<sup>a</sup>The first number equals “Between Groups”. The second number equals “Within Groups”.

\**p* < .05

## **CHAPTER 5 - Summary, Conclusion, and Recommendations**

### *Summary*

#### *Purpose of the Study*

The study investigated the strengths and weaknesses of the McNair Scholars Program as perceived by McNair alumni, focusing on the differences between program factors and selected demographic variables for former McNair Scholars. The McNair program is funded by the U.S Department of Education to assist academically talented undergraduates who have socio-economic barriers to their pursuit of doctoral studies. This program honors Dr. Ronald E. McNair, the late astronaut and physicist, who overcame the socio-economic barriers of race, being a first-generation college student, and coming from a low-income family.

#### *Research Questions*

The central research question guiding the study was: Which program factors (services and activities) are perceived to be strengths or weaknesses by McNair alumni from selected school programs in Kansas? To address this question three programs located at Regent's Universities in the State of Kansas were selected: Kansas State University (KSU), The University of Kansas (KU), and Wichita State University (WSU). Furthermore, the initial question addresses three issues.

1. What are the perceptions of McNair alumni regarding the strengths and weaknesses of the six program factors? The six program factors are listed below.
  - Academic Research Workshops

- Selecting and Working With a Faculty Mentor
  - Graduate Record Examination (GRE) Preparation
  - The Summer Research Internship
  - Academic Support Services
  - Enrollment in a Graduate School Leading to a Doctorate Degree
2. What are the perceptions of McNair alumni regarding the strengths and weaknesses of other program factors, such as availability of, and assistance from, the faculty mentor, and the amount of the stipend provided to McNair Scholars?
  3. Are there differences among McNair alumni perceptions related to gender, race, and ethnicity about the six program factors?

Additionally, the following research questions generate data that describes McNair alumni and their attitudes towards education.

4. Are the national program eligibility criteria reflected in the following data collected from Kansas Universities McNair Scholar alumni?
  - First-generation college status
  - Family income status
  - Race and ethnicity
  - Grade Point Average (at time of graduation)
  - Other colleges attended
  - Major field of study
5. What were the perceptions and attitudes of McNair Scholar alumni towards getting an education?

- Perceptions about being a McNair Scholar
- Attitude towards getting an education prior to earning an undergraduate degree
- Attitude towards getting an education after earning a college degree

### ***The Methodology Used in the Study***

The McNair Scholar Program Survey was distributed to 259 former program participants (McNair alumni) who graduated from Kansas State University, the University of Kansas, and Wichita State University between 1996 and 2004. Data was only available through 2004 at the time of the study. McNair alumni were asked to respond to questions relating to their perceptions of the program factors. Additionally, they were asked to respond to selected demographic information.

To distribute the surveys, contact information was obtained from the three institutions' program records. The method used to obtain survey responses was based on Dillman's (2000) system of contacts. Once the data were collected from 137 respondents (53.0%), t-tests and ANOVAS were used to determine if the perceptions of McNair alumni relating to program factors were associated with selected demographics.

### ***Major Findings***

Overall, the mean comparisons of program measures suggest that McNair alumni believed program services and activities to be "Definitely More of a Strength than Not". These studies further suggest that the services and activities within "Other Program Factors", such as "The availability of faculty mentor," "Assistance received from faculty mentor," and "The amount of the stipend provided," are more of a strength of the program than any other

factor.

### *Gender*

Overall, the mean comparisons across selected program measures controlling for gender suggests that females and males view McNair Scholars Program services and activities to be more of a strength than a weakness. Overall, the program provided the services and activities for females and males as intended. Furthermore, t-tests yielded a significant difference between females and males for just one of seven program areas, “GRE Preparation.”

### *Race and Ethnicity*

First, the mean scores recorded by racial and ethnic groups suggest that they viewed the program services as being more of a strength than a weakness. Second, the use of ANOVAs to investigate the mean differences based on race yielded statistically significant differences for one of the program components, “Academic Support Services”. Next, the Bonferonni post-hoc tests yielded significant differences among black/African American and white/Caucasian racial groups in their perception of the strengths and weaknesses of “Academic Support Services”.

The use of ANOVAs to investigate the mean differences among ethnic groups yielded significant differences for two of the program components, “Summer Research Internship”, and Academic Support Services”. Post-hoc tests did not yield statistically significant differences between ethnic groups.

### *Higher Education Institutions Attended*

Overall, the mean scores recorded by the McNair alumni from Kansas State University (KSU), the University of Kansas (KU), and Wichita State University (WSU)

suggest that they view the program services and activities to be more of a strength than a weakness. Specifically, the use of ANOVAs to investigate the mean differences among higher education institution attended did not yield statistically significant differences. This implies that the McNair alumni from KSU, KU, and WSU held similar views regarding the program services and activities. The ANOVAs also imply that the three institutions are providing the services that are intended.

Based on a review of the literature, the target population for the McNair program face socio-economic barriers such as race and cultural differences, not being able to attend college because of the expense, and lack of role models to succeed in college. However, programs such as McNair clearly succeed in helping students to overcome these barriers.

In addition to being asked to reply to questions related to the program services and activities, respondents were given the opportunity to write comments at the end of Part I of the survey. Some of the comments from respondents from KSU, KU, and WSU follow:

#### **KSU**

“I thought the McNair staff did an excellent job preparing my group for the GRE and applying for graduate school.”

“The McNair program was instrumental in my academic development. I appreciate the invaluable opportunity. Thank You!”

“Overall, the attention and assistance I received at KSU was and has continued to be top notch.”

“I will always look back on the McNair Program as being one of the most rewarding and fulfilling experiences of my college career.”

“McNair introduced me to the idea of pursuing a graduate degree. My only

suggestion would be to further investigate and make available funding sources for graduate studies “Overall great program!!”

“The program is fantastic. Although I haven’t yet completed a graduate degree, the program is very beneficial in making educational dreams come true!”

#### **KU**

“The McNair program is very essential and effective in supporting students in achieving graduate program goals. Please keep the program.”

“I think that if I hadn’t been a McNair Scholar, I may not have [sic] graduated college.”

“McNair really helped me learn how to write for research and graduate school papers.”

“Great program, I still go to Robert for advice. I absolutely loved the McNair Program.”

“I know for a fact that the main reason I was accepted into my PhD program and received a full ride, was due to the research experience I received in the summer research institute...”

“The McNair program has been crucial to my success as a graduate student.”

“Nothing bad to say! Excellent program.”

#### **WSU**

“The McNair Scholars Program is an excellent program. I would have never been able to go to graduate school without the assistance of the McNair Program.”

“The scholars program is very essential to the development of great graduate candidates. I will never forget this great opportunity! Thank you!”

“This program was a turning point in my education and I am grateful for being a part of it.” “...I had excellent one-on one guidance from the staff. I am finishing my thesis now for a masters’ [sic] degree.”

“This program has helped tremendously. It gave me confidence along a goal-oriented mindset to achieve my dreams.”

### ***Other Findings***

This section covers demographic data and attitudes of the survey respondents.

#### ***First-Generation College Status and Income***

These findings focus on demographic data relating to respondents’ first-generation college level and family income status. First, over two-thirds (72.0%) of the respondents indicated that they were the first in their family to earn a bachelor’s degree. Second, most respondents (59.0%) indicated that they were from lower-income families. Specifically, a number of respondents (21.0%) indicated that they were from families whose income was less than \$10,000. This is in contrast to the few (5.0%) who were from families whose income was more than \$70,000.

#### ***Attitudes Toward a College Education for McNair Scholar Alumni***

With regard to McNair alumni perception of what being a McNair Scholar means, most alumni (38.6%) indicated “Accomplishment/Achievement” best described how they felt. This was followed by “Being a prospective graduate student” (24.8%). Also, approximately 35.0% of the McNair alumni recorded that they felt confident prior to earning a degree. This number increased dramatically to 55.0% after alumni earned their degrees.

### ***Attitudes Toward A College Education for Gender***

Prior to earning a degree, females (76.0%) and males (62.0%) indicated that “Education is necessary to achieve my goals” best describes how they felt about getting a college education. Males indicated that they were feeling slightly more “Apprehensive” than females about getting an education prior to and after earning a bachelor’s degree. As expected, both males and females indicated that they were less “Apprehensive” about getting an education after earning a bachelor’s degree.

### ***Attitudes Toward a College Education for Race and Ethnicity***

“Education is necessary to help me achieve my goals” best describes how all racial and ethnic groups felt about getting an education prior to earning a college degree. Most of the racial and ethnic groups also indicated this after earning a college degree. Particularly, McNair alumni within the Asian, Native, and Pacific Islanders racial category indicated that feeling “Confident” best described their feelings about getting an education. Also, Hispanics-in Mexico indicated that “Confident” and “Education is necessary to help me achieve my goals” best describes how they felt about getting an education. Ultimately, as expected, racial and ethnic groups indicated more positive feelings about getting an education after earning a college degree.

In addition, other findings included respondents’ recommendations relating to which program services and activities need more or less emphasis. For the most part, respondents indicated that existing program services and activities should maintain their current level of emphasis. Respondents felt that a sufficient amount of time was given to most of the program activities and services, with two exceptions. First, most respondents (61.0%) recommended that more emphasis be placed on one of the areas within “Selecting and

Working With a Faculty Mentor,” namely ‘Acquiring an understanding of how to interview prospective faculty mentors’. Second, fifty-percent of the respondents recommended that more emphasis be placed on “Assisting with obtaining financial resources for graduate school”. Only a few of the respondents (8.0%) recommended that there be less emphasis placed on the program services and activities, as follows:

### **Academic Research Workshops**

- Using the APA or appropriate style guide for the field for preparing research papers (less than 4%).
- Enhancing understanding of a research library and information retrieval (less than 2%).
- Enhancing understanding of ethical issues (less than 1%).
- Selecting and Working with a Faculty Mentor.
- Acquiring an understanding of the characteristics to look for in a faculty mentor (2%).
- Acquiring an understanding on how to interview prospective faculty mentors (less than 1%).
- Acquiring an understanding of establishing feedback sessions on your research project with your faculty mentor (less than 1%).

### **Graduate School Record Examination (GRE) Preparation**

- Increasing knowledge of standardized tests (less than 1%).
- Understanding the interpretation and implications of the scores (less than 1%).

### **The Summer Research Internship**

- Enhancing the ability to write a research abstract (less than 1%).
- Enhancing understanding of a research library and information retrieval (1%).

### **Academic Support Services**

- Providing tutoring in courses (1%).
- Providing academic planning and goal setting (less than 1%).
- Providing assistance in identifying potential graduate school programs (1%).

### **Enrollment in a Graduate School Program Leading to a Doctorate Degree**

- Enhancing knowledge of a graduate program in your field of interest (1%).

### **Other Program Factors**

- Availability of faculty mentor (less than 1%).
- Assistance from a faculty mentor (less than 1%).
- The amount of the stipend provided (less than 1%).

### ***Conclusions***

Overall, respondents indicated that the McNair Scholars Program was beneficial in helping them achieve their educational goals. The mean scores recorded by McNair alumni suggest that they perceive the program services and activities to be more of a strength than a weakness. A statistically significant difference was found using t-tests for one of the program services and activities based on gender. Statistically significant differences were found using ANOVAs between several McNair program services and activities controlling for race and ethnicity. Also, post-hoc tests yielded statistically significant differences

between racial groups but not for ethnic groups. The mean comparisons suggest that racial and ethnic groups had positive experiences as McNair scholars. Furthermore, there were no statistically significant differences found between McNair program services and activities controlling for institutional affiliation. Finally, the mean comparisons suggest that McNair alumni regardless of their institutional affiliation had positive perceptions of the program services and activities.

### ***Recommendations***

These recommendations are for program directors and for further study.

#### ***Recommendations for Program Directors***

Based on the analysis of data, and findings, McNair leadership is encouraged to:

1. Provide more instruction to assist program participants in acquiring an understanding of how to interview prospective faculty mentors.
  - Collaborate with graduate school faculty to provide McNair scholars with appropriate questions to ask prospective mentors.
  - Facilitate mock interviews with McNair scholars.
  - Provide each scholar with written guidelines on how to interview prospective mentors.
2. Intensify efforts to assist program participants to obtain financial resources for graduate school.
  - Provide each scholar with a handbook on how to obtain financial resources for graduate school.
  - Collaborate with the graduate programs that are in the scholars' major field to

obtain graduate school funding.

3. Strive to enhance all of the program services and activities that would result in increasing the number of McNair scholars enrolling in graduate school and completing a doctorate degree.
  - Continuously assess the program's success in accomplishing its purpose.
  - Continue to work on obtaining the federal, state, and institutional commitment necessary for the program by reporting the need for it and its successes.
4. Intensify efforts to involve McNair alumni in promoting the program to prospective McNair scholars, administrators, faculty, state and national legislators.

### ***Recommendations for Further Study***

Further study would be useful in understanding the effectiveness of the Kansas McNair Scholars Program. Specifically, a qualitative study using a survey and/or interviews which ask McNair alumni who have completed a doctoral program to give their view of how the program services and activities can be further strengthened. A qualitative study of this nature would elicit more in-depth responses regarding McNair program services and activities.

The current study should be replicated once McNair alumni have completed a doctoral program. This would be helpful to see if McNair alumni perceptions changed prior to and after completing a doctoral program.

A look at the careers of Kansas McNair alumni after earning a doctoral degree would be useful to see if the McNair program is increasing diversity among university faculty. This

information would give a better understanding of how well the McNair program is meeting its ultimate goal of providing services and activities that would lead to a more diverse college faculty.

Meanwhile, the current study is beneficial in providing an understanding of the strength and weaknesses of the services and activities as perceived by Kansas McNair Scholars. In fact, other states in addition to Kansas are urged to produce related studies. This would provide a better understanding of the effectiveness of the program as perceived by McNair alumni beyond the state of Kansas. Also, this sort of study would be helpful to those evaluating the need for the program on a national and local level.

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## **Appendix A - Prenotice Letter for McNair Survey**

July 11, 2005

Dear:

A few days from now you will receive in the mail a request to complete a brief survey for a dissertation on the McNair Scholars Program. The purpose of the study is to investigate the program services and activities that are perceived as strengths and weaknesses by McNair Scholar alumni from Kansas State University, the University of Kansas, and Wichita State University, in preparing them for graduate school. In addition, this study will look at the relationship between the perceptions of alumni and selected demographic data.

You are receiving this letter in advance because it has been found that many people like to know ahead of time that they will be contacted. This study is an important one that will help us understand the effectiveness of the services and activities of the McNair Scholars Program, and the areas that need to be strengthened.

Your participation in this study will be greatly appreciated.

Sincerely,

Kathleen V. Greene, Doctoral Candidate  
Curriculum & Instruction and  
Director, The McNair Scholars Program

## Appendix B - Survey Cover Letter

July 18, 2005

Dear:

I am writing to ask your help in a study of the state of Kansas McNair Scholars Program. You should have recently received a letter from me regarding this study. This study is an attempt to learn which program factors has the most impact in preparing undergraduates to complete graduate school.

I am contacting all McNair Scholars who graduated from Kansas State University, the University of Kansas, and Wichita State University between 1996 and 2004 to ask their opinions about the strengths and weaknesses of the program. Additionally, you will be asked to give your opinion on which areas of the program should be emphasized.

Results from the survey will be used to help make the McNair Scholars Program in the state of Kansas to provide the best services and activities possible.

Your responses will be completely confidential and released only as summaries in which no individual responses can be identified. The completion of the enclosed survey is voluntary. However, you can help us very much by taking a few minutes to share your opinions about the McNair Scholars Program. Please return the completed survey in the enclosed stamped envelope by July 27 or within a week of receipt of this letter.

If you have questions about completing this survey, contact me collect at 785-532-5356 or via email at [kgreene@ksu.edu](mailto:kgreene@ksu.edu).

Thank you for your help with this study for the McNair Scholars Program.

Best regards,

Kathleen V. Greene, Doctoral Candidate  
Curriculum & Instruction and  
Director, The McNair Scholars Program,  
Kansas State University



## Appendix C - McNair Scholars Program Survey

### Part I. McNair Program Factors

The services and activities of the McNair Scholars Program are listed below. On the left hand column, please indicate the degree to which you believe each represents a “strength” or a “weakness” in the McNair program in preparing you for a graduate degree. If you did not participate in this service and activity, circle “0” for Not Applicable. On the right hand column, please indicate whether more, the same, or less emphasis should be placed on each service and activity. Please circle only one response.

#### Strength or Weakness

5 = Definitely a Strength  
 4 = More of a Strength Than Not  
 3 = Neither a Strength nor a Weakness  
 2 = More a Weakness Than a Strength  
 1 = Definitely a Weakness  
 0 = Not Applicable

#### Services and Activities

#### My Recommendations

3 = Increase Emphasis  
 2 = Maintain Emphasis  
 1 = Decrease Emphasis

#### Strength or Weakness

#### Academic Research Workshops

#### My Recommendations

5	4	3	2	1	0	1. Selecting a research topic	3	2	1
5	4	3	2	1	0	2. Using the American Psychological Association (APA) or one that is appropriate for the field as a guide for preparing research papers	3	2	1
5	4	3	2	1	0	3. Developing a research proposal	3	2	1
5	4	3	2	1	0	4. Enhancing understanding of a research library and information retrieval	3	2	1
5	4	3	2	1	0	5. Enhancing awareness of diversity issues in research	3	2	1
5	4	3	2	1	0	6. Enhancing awareness of diversity issues in graduate school	3	2	1
5	4	3	2	1	0	7. Enhancing understanding of ethical issues	3	2	1

**Strength or Weakness**

5 = Definitely a Strength  
 4 = More of a Strength Than Not  
 3 = Neither a Strength nor a Weakness  
 2 = More a Weakness Than a Strength  
 1 = Definitely a Weakness  
 0 = Not Applicable

**Services and Activities****My Recommendations**

3 = Increase Emphasis  
 2 = Maintain Emphasis  
 1 = Decrease Emphasis

**Strength or Weakness****Selecting and Working  
With a Faculty Mentor****My Recommendations**

5 4 3 2 1 0	8. Acquiring an understanding of the characteristics to look for in a faculty mentor	3	2	1
5 4 3 2 1 0	9. Acquiring an understanding on how to interview prospective faculty mentors	3	2	1
5 4 3 2 1 0	10. Acquiring an understanding of establishing feedback sessions on your research project with your faculty mentor	3	2	1
5 4 3 2 1 0	11. Acquiring an understanding of obtaining guidance from faculty mentor relating to career goals and graduate education	3	2	1
5 4 3 2 1 0	12. Acquiring an understanding of obtaining guidance from mentor on presenting your research topic	3	2	1

**Graduate Record Examination (GRE) Preparation**

5 4 3 2 1 0	13. Increasing knowledge of standardized tests	3	2	1
5 4 3 2 1 0	14. Increasing confidence in taking standardized tests	3	2	1
5 4 3 2 1 0	15. Preparing for the vocabulary section	3	2	1
5 4 3 2 1 0	16. Preparing for the quantitative section	3	2	1
5 4 3 2 1 0	17. Understanding the interpretation and implications of the scores	3	2	1

**Strength or Weakness**

5 = Definitely a Strength  
 4 = More of a Strength Than Not  
 3 = Neither a Strength nor a Weakness  
 2 = More a Weakness Than a Strength  
 1 = Definitely a Weakness  
 0 = Not Applicable

**Services and Activities****My Recommendations**

3 = Increase Emphasis  
 2 = Maintain Emphasis  
 1 = Decrease Emphasis

**Strength or Weakness****The Summer Research Internship****My Recommendations**

5 4 3 2 1 0	18. Enhancing the ability to write a research abstract	3	2	1
5 4 3 2 1 0	19. Enhancing the ability to conduct a literature review and citing references	3	2	1
5 4 3 2 1 0	20. Enhancing understanding of a research library and information retrieval	3	2	1
5 4 3 2 1 0	21. Enhancing understanding of conducting research	3	2	1

**Academic Support Services**

5 4 3 2 1 0	22. Providing tutoring in courses	3	2	1
5 4 3 2 1 0	23. Providing academic planning and goal setting	3	2	1
5 4 3 2 1 0	24. Providing support to attend research conferences	3	2	1
5 4 3 2 1 0	25. Enhancing understanding of the characteristics to look for in a graduate school program	3	2	1
5 4 3 2 1 0	26. Providing assistance in identifying potential graduate school programs	3	2	1
5 4 3 2 1 0	27. Providing support for campus visits to select an appropriate graduate program	3	2	1

**Strength or Weakness**

- 5 = Definitely a Strength
- 4 = More of a Strength Than Not
- 3 = Neither a Strength nor a Weakness
- 2 = More a Weakness Than a Strength
- 1 = Definitely a Weakness
- 0 = Not Applicable

**Services and Activities**

**My Recommendations**

- 3 = Increase Emphasis
- 2 = Maintain Emphasis
- 1 = Decrease Emphasis

**Strength or Weakness**

**Enrollment in a Graduate School  
Program Leading to a Doctorate Degree**

**My Recommendations**

5	4	3	2	1	0	28. Assisting with the graduate school application process	3	2	1
5	4	3	2	1	0	29. Assisting with obtaining financial resources for graduate school	3	2	1
5	4	3	2	1	0	30. Enhancing knowledge of a graduate program in your field of interest	3	2	1

**Other Program Factors**

5	4	3	2	1	0	31. Availability of faculty mentor	3	2	1
5	4	3	2	1	0	32. Assistance from faculty mentor	3	2	1
5	4	3	2	1	0	33. The amount of the stipend provided	3	2	1

**Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Part 2. Demographic Information

Your responses to the following questions will be valuable to the study for statistical purposes. **Please respond to the following by placing an X in the appropriate space.**

### 1. What is your gender?

- Male
- Female

### 2. What is your race/ethnicity?

#### a. Race

- Black/African American
- Asian American
- American Indian/Alaska Native
- Pacific Islander
- White/Caucasian
- Multi-racial

#### b. Ethnicity

- Non-Hispanic
- Hispanic – Origins in Mexico
- Hispanic – Origins not in Mexico

### 3. Has either of your parents/guardians received a four-year college degree?

- Yes
- No

### 4. Which of the following categories best describes your family income when you began the McNair Program?

- \$0 to 9,999
- \$10,000 to 19,999
- \$20,000 to 29,999
- \$30,000 to 39,999
- \$40,000 to 49,999
- \$50,000 to 59,999
- \$60,000 to 69,999
- \$70,000 to 79,999
- \$80,000 to 89,999

- \$90,000 to 99,999
- \$100,000 or more
- Not sure

**5. Which of the following categories best describes your grade point average when you completed your undergraduate degree?**

- 0.0 to 1.99
- 2.0 to 2.49
- 2.5 to 2.99
- 3.0 to 3.49
- 3.5 to 3.99
- 4.0

**6. Did you attend another college prior to attending KSU, KU or WSU?**

- Yes
- No

**7. If yes, how many hours did you transfer to KSU, KU or WSU?**

- 1 to 10 hours
- 11 to 20 hours
- 21 to 30 hours
- 31 to 40 hours
- 41 to 50 hours
- 51 to 60 hours

**8. Which of the following categories describes your major field when you completed your undergraduate degree?**

- Business
- Education
- Human Ecology
- Engineering
- Computer Science
- Physical Sciences, including Mathematics
- Natural Sciences
- Social Sciences (Psychology, History, Sociology, Social Work)
- Humanities
- English
- Other

**9. Which of the following categories best describes your grade point average in your major field when you were an undergraduate student at KSU, KU or WSU?**

- 0.0 to 1.99
- 2.0 to 2.49
- 2.5 to 2.99
- 3.0 to 3.49
- 3.5 to 3.99
- 4.0

**10. Which of the following best describes what being a McNair Scholar means to you?**

- Accomplishment/Achievement
- Recognition for being a good student
- Being a prospective graduate student
- Being a prospective college faculty member
- Being a part of an elite group

**11. Which of the following best describes how you felt about getting an education prior to earning a bachelor's degree? Place an X in all of the appropriate spaces.**

- Apprehensive (anxious, uneasy, or nervous)
- Confident
- Not Sure
- Education is necessary to help me achieve my goals
- Education is not necessary to help me achieve my goals

**12. Which of the following best describes how you felt about getting an education after you earned a bachelor's degree? Place an X in all of the appropriate spaces.**

- Apprehensive (anxious, uneasy, or nervous)
- Confident
- Not sure
- Education is necessary to help me achieve my goals
- Education is not necessary to help me achieve my goals

**13. When did you attend KSU, KU or WSU? \_\_\_\_\_**

**14. When did you graduate from KSU, KU, or WSU?**

- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004

The next two questions will help the Kansas McNair Scholar Program staff get a better idea as to how many McNair alumni are from the state of Kansas and where they now plan to reside.

**15. Are you a native Kansan?**

- Yes
- No, I am from \_\_\_\_\_

**16. Where do you plan to live? \_\_\_\_\_**

---

Thank you for completing this survey. Your responses will be used to further enhance the McNair Scholars Program. The information that you have provided will be kept confidential and released only as summaries in which no individual responses can be identified. Please return this survey in the enclosed stamped, self-addressed envelope **within one week after receipt of this survey or by July 29, 2005.** Again, thank you for your cooperation.

## **Appendix D - Postcard Reminder of Survey**

July 25, 2005

Last week you should have received a survey asking your opinions about the McNair Scholars Program's services and activities in preparing you for graduate school.

If you have already completed and returned the survey to me, please accept my sincere thanks. If not, please do so today. I am especially grateful for your help because it is only by asking individuals like you to give your opinion that the staff of the McNair Scholars Program can understand the effectiveness of its services and activities and how to improve it.

If you did not receive a survey, or if it was misplaced, please call me collect at 785-532-5356 or e-mail me at [kgreene@ksu.edu](mailto:kgreene@ksu.edu).

Kathleen V. Greene, Doctoral Candidate  
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