

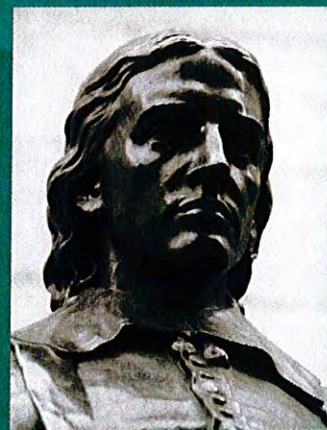
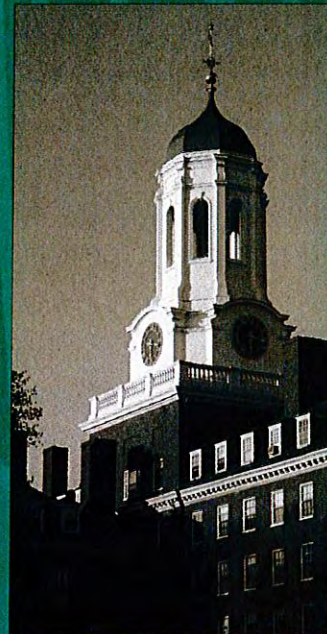
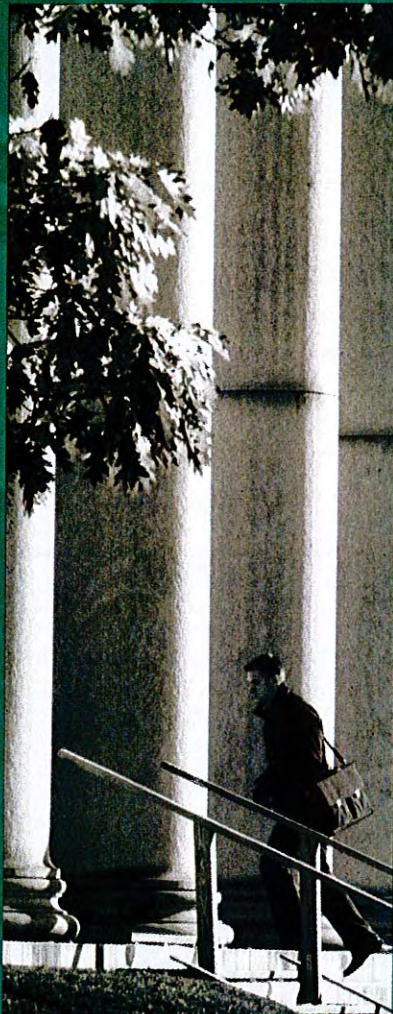
AUGUST 2004

Opportunity

OUTLOOK

COUNCIL FOR OPPORTUNITY IN EDUCATION

Breaking Down ECONOMIC BARRIERS *at Harvard*



EDITORIAL BOARD

T. J. Bryan
Coppin State College

Charles Desmond
University of Massachusetts-Boston

Jay Richard Fuhriman
Boise State University

George Jackson
Iowa State University

Jo Malin
SUNY-Binghamton

Ronald McFadden
University of Tennessee at Knoxville

Mike Miller
University of Montevallo

Vincent Tollers
SUNY-Brockport

COUNCIL OFFICERS

Bonnie G. Hall, Board Chair
Delaware Technical
and Community College
Georgetown, DE

Jonathan McKenzie, Past Board Chair
The Family Centered
Educational Agency
Phoenix, IL

Charles Dyson, Board Chair-Elect
St. Louis University
St. Louis, MO

Lucy Jones, Treasurer
Rich Mountain Community College
Mena, AR

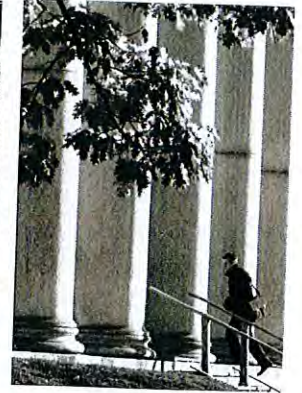
Barbara Burkart, Secretary
Salt Lake Community College
Salt Lake City, UT

Arnold L. Mitchem
President

Maureen Hoyler
Executive Vice President

AUGUST 2004
Opportunity
OUTLOOK
COUNCIL FOR OPPORTUNITY IN EDUCATION

— IN THIS ISSUE —



Higher Education and the American Dream

Remarks to ACE from Harvard University President, Lawrence H. Summers . . . 2

Harvard Announces New Initiative Aimed at Economic Barriers to College

Reprinted from the Harvard Gazette 6

A Talented Undergraduate Research Minority Fellowship Program at UTK

by Ernest W. Brewer and Jama McMahan Landers 9

In an effort to improve readership, we have made some changes to the Opportunity Outlook Journal. We recognize your busy schedules and in an effort to maximize your time, we have shortened the length of each issue of Opportunity Outlook. Based on readership surveys, the journal will feature a maximum of three articles per issue. These articles are carefully selected based on information that is important to you and your program. As always, we are continually accepting manuscripts for publication in the Journal. Please continue to submit your manuscripts and keep us informed of research you are conducting.

Christopher Davis
Editor

Tressa M. Penrod
Assistant Editor

The *Opportunity Outlook* Journal of the Council for Opportunity in Education (SSN 0889-8405) is the official journal of the Council. The *Opportunity Outlook* Journal is published bi-annually: **Permission:** Copyrights owned by the Council. Reproduction of material in this publication is hereby authorized provided the use is non-commercial and education and does not exceed 100 copies. **Subscriptions:** For information, contact Yvette Thompson at (202) 347-7430. **Reviews:** Publishers wishing to have books reviewed should submit two copies to the editor.

A Talented Undergraduate Research Minority Fellowship Program at UTK

— ERNEST W. BREWER & JAMA MCMAHAN LANDERS —

Introduction

The recruitment and retention of underrepresented and minority students has long been recognized as a central problem in higher education (Bane & Winston, 1980; Case & Richardson, 1990; Fields, 1998; Hawkins, 1993; Hesser & Lewis, 1992; Hodgkinson, 1993; Hrabowski, 1991; Hrabowski & Pearson, 1993; Juarez, 1991; Keller, 1988; London, 1992; Lords, 2001; National Task Force on Minority High Achievement, 1999; Richardson & Skinner, 1992; Sondgeroth & Stough, 1992). Despite an increase in overall enrollment rates, participation in higher education has been lower for many minority and low-income students than it has been for White students from middle class homes (National Center for Education Statistics, 1997). Moreover, minority and low-income students often have attended secondary schools that have prepared them inadequately for the rigors of conducting research, especially in math and science (National Center for Education Statistics). Consequently, there have been problems relative to how to recruit underrepresented and minority students to enter higher education programs and how to help them to persist to graduation and beyond to graduate school.

The changing state of the American workforce adds a sense of urgency to deal with these problems. The fast pace of technological progress and the resultant culture of constant change

will require that the American workforce be more educated and more skilled than workforces of the past (Darling-Hammond, 1997; Judy & D'Amico, 1997). Coinciding with the need for increased education and skill is a trend toward increased diversification of the American workforce (Judy & D'Amico). Increasing numbers of minorities in the workplace will be expected and needed to fill positions requiring advanced knowledge and skill; failure to fill these positions will result in decreased productivity and performance. Thus, unless minority participation rates in higher education increase, there is cause for concern for the viability of the nation's economy.

Initiatives for increasing minority access to higher education have included affirmative action and educational opportunity outreach programs. Whereas affirmative action has involved using race as a determining factor for admission into higher education, educational opportunity outreach programs have focused on preparation and education regarding participation in higher education. In light of recent challenges to affirmative action (Bush, 2003), the charge of increasing minority access to higher education—especially graduate

education—most likely will fall to educational opportunity outreach programs. Therefore, information regarding the effectiveness of such programs will become increasingly valuable.

The purpose of this article is to present results of a longitudinal study of the Talented Undergraduate Minority Research Fellowship Program at The University of Tennessee-Knoxville (UTK). Although this program has been eliminated due to changes in the federal government's funding policies, this research is valuable because it provides evidence of the potential for such

programs to promote minority access to graduate school. Such evidence can provide direction and insight into decisions regarding the structure and substance of existing and future minority fellowship programs.

Educational Opportunity Outreach Programs

The Higher Education Act of 1965 served to bring educational opportunity outreach programs into the mainstream of American education policy. The Act authorized the creation of a series of educational opportunity outreach programs that came to be known as the TRIO programs. Named for the

There have been problems relative to how to recruit underrepresented and minority students to enter higher education programs and how to help them to persist to graduation and beyond to graduate school.

original three programs (i.e., Upward Bound, Talent Search, and Student Support Services), the TRIO programs were designed to increase access to higher education among low-income students whose parents did not graduate from college. The racial composition of TRIO program participants has been 39% White, 36% African American, 16% Hispanic, 5% Native American, and 4% Asian American (Council for Opportunity in Education, n.d.). The TRIO programs have received much recognition and have been the focus of much examination in the education community (Blake, 1998). Moreover, participants in TRIO programs have reported high levels of academic and professional achievement (Coles, 1998). However, TRIO programs have not been the only educational opportunity outreach programs available to minority students. Additional higher education legislation and initiatives from both

private and public organizations have generated educational programs specifically geared to meet the needs of underrepresented minority students who aspire to higher education and subsequent professional careers. As an example, consider the Meyerhoff Scholars Program at the University of Maryland, Baltimore County (UMBC).

Established in 1988 with a half-million dollar grant from the Robert and Jane Meyerhoff Foundation, the Meyerhoff Scholars Program was designed as a merit-based scholarship program targeting African Americans, particularly male students, who aspire to careers in science and engineering

(Woolston, Hrabrowski, & Maton, 1997). Since its inception, the program has attracted students with high academic credentials (Fries-Britt, 1998). The program has incorporated a number of components, including financial aid, summer research internships, personal advising and counseling, faculty involvement, study groups, mentors, community service, and family

involvement (Maton, Hrabowski, & Schmitt, 2000). Programs outcomes have included such measurable indices as increased graduation rates and increased likelihood of entering graduate or professional school (Maton et al.) as well as qualitative indicators like a culture of academic pride and achievement (Fries-Britt).

In spite of supportive legislation and the proven success of programs like the Meyerhoff Scholars, however, there has been a misconception that there are large numbers of minority fellowship programs available. In fact, such programs have been in short supply, have

admitted limited numbers of students, and have not attracted students consistently. Considerable research has explored the gap between program availability and minority participation in these programs (Bane & Winston, 1980; Berger, 1991; Case & Richardson, 1990; Hesser & Lewis, 1992; Hodgkinson, 1993; Hoyte & Collett, 1993; Hrabowski & Pearson, 1993; Jordau & Williamsou, 1990; Juarez, 1991; Keller, 1988; Mooney, 1989; Richardson & Skinner, 1992).

The gap between program availability and minority participation has been particularly disturbing because research has demonstrated a strong

relationship between participation in a minority fellowship program and admission to graduate school (Garcia, 1993; Hesser & Lewis, 1992; Keller, 1993; Maton et al., 2000; Mooney, 1988; Richardson & Skinner, 1992). In general, students often have chosen not to pursue graduate studies because of (a) competitive job opportunities after graduation from baccalaureate programs, (b) an inability or unwillingness to extend college studies beyond a 4- or 5-year program, (c) problems qualifying for admission into desired programs, or (d) personal conflicts that make graduate school an unattractive career choice. Minority students have cited these same reasons for not pursuing graduate study as well (Case & Richardson, 1990; Maddox & Smith-Maddox, 1990; Tayler & Jackson, 1989). A nationwide problem for graduate schools has been the imbalance between the high demand for minority students and the reluctance of those students to enter graduate or professional study. Graduate programs are competitive, even at institutions that have relatively open undergraduate admissions programs. Moreover, Historically Black Colleges and Universities (HBCUs) typically have not had extensive graduate programs, and those that have had such programs have had competitive admissions policies. Fellowship programs can be especially valuable in helping minority students identify and apply for graduate programs and for departmental aid. Typically, fellowship programs can assist undergraduate students by providing a composite look at graduate level study, what graduate school can offer, and the process for locating and obtaining financial aid to pursue graduate degrees.

The Talented Undergraduate Minority Fellowship Research Program at UTK

The Talented Undergraduate Minority Fellowship Research Program at UTK was funded by grants from the

The changing state of the American workforce adds a sense of urgency to deal with these problems.

The charge of increasing minority access to higher education—especially graduate education—most likely will fall to educational opportunity outreach programs.

Table 1
Demographic Characteristics of Program Participants and Control Group

Demographic Characteristics	Program Participants	Control Group
	(N = 179) %	(N = 193) %
Gender		
Men	27.9	22.8
Women	71.5	77.2
Age Ranges		
17-19 years	10.6	25.4
20-22 years	64.8	57.0
23-25 years	14.5	9.3
26+ years	8.9	7.3
Racial/Ethnic Background		
African American	88.8	93.8
White American	3.4	3.1
Native American	1.1	1.6
Hispanic American	4.5	1.0
Asian American	1.7	0.5
Marital Status		
Single	87.7	95.9
Married	3.9	2.6
Divorced	3.4	1.6
Separated	1.1	0.0
Family Size		
0-3	43.6	46.6
4-6	43.5	38.4
7-9+	11.8	12.9
Maternal Educational Level		
9th grade or below	7.3	8.3
10th-11th grade	10.6	6.7
12th grade	35.8	37.8
13+	40.2	38.3
Institution Size		
0-1,000	17.9	17.6
1,001-5,000	45.8	47.2
5,001-10,000	12.3	8.3
10,000+	19.6	8.8
Institution Type		
Public	55.3	44.0
Private	42.5	39.9

Note: Cell percentages do not total 100% due to missing data.

U.S. Department of Education for the years 1987-1993. The program provided fellowships to talented, undergraduate students who demonstrated financial need and were from minority groups traditionally underrepresented in graduate education (Brewer, 1988, 1989b, 1990). Students were recruited

from across the southeastern United States and from over 50 postsecondary institutions and were accepted based on GPAs, recommendations, and other information provided on their application forms (Brewer, 1988, 1989b, 1990).

The program of study consisted of summer research internships augment-

ed with 6 semester hours of academic courses for credit in statistics and research methods and other scholarly experiences (Brewer, 1988, 1989b, 1990). All activities were designed to acquaint participants with the necessary academic foundation for the successful pursuit of a graduate program (Brewer, 1989a). Participants spent 6 weeks on the UTK campus in the summer and received weekly stipends during that time. In addition, during the on-campus period, participants worked with a faculty mentor in a major research activity, received academic and career counseling, and participated in academic research courses and graduate exam preparation workshops (Brewer, 1988, 1989b, 1990). Participants also had opportunities to attend seminars with a variety of accomplished speakers and to engage in cultural enrichment activities; for example, one group of participants had the privilege to attend a reception given in their honor by the late Alex Haley on his farm in East Tennessee. Furthermore, participants received an array of written materials, including a program newsletter—*Communiqué*—that provided insights into how to smoothly navigate the graduate school experience (Brewer, 1993) and updated readers about achievements of former participants (Brewer, 1992). Program administrators were held accountable for meeting program goals by the requirement to submit a written evaluative report of their program to the U.S. Department of Education at the end of each funded year (Brewer, 1989a).

The Talented Undergraduate Minority Research Fellowship program at UTK was phased out legislatively as the Ronald E. McNair Post-Baccalaureate Achievement Program came into existence and began serving students from similar backgrounds. The purpose of the McNair program has been to increase doctoral program entry and completion rates among low-income, first-generation college students and other groups traditionally

underrepresented in higher education. To meet this purpose, the program has provided qualifying students with research opportunities, summer internships, academic counseling, and assistance in applying for admission and financial aid for graduate programs. Research regarding the effectiveness of the McNair program has been promising (Grimmett, Bliss, & Davis, 1998; Ishiyama & Hopkins, 2001; Nnadozie, Ishiyama, & Chon, 2001).

Research Questions

To guide the study, we developed three research questions. Those questions were as follows:

1. Did participation in the Talented Undergraduate Minority Research Fellowship program at UTK affect participants' academic performance as operationalized by GPAs and teacher ratings?
2. Did participation in the Talented Undergraduate Minority Research Fellowship program at UTK affect participants' entry and completion rates in graduate programs?
3. What effect did participation in the Talented Undergraduate Minority Research

Fellowship program at UTK have on participants' knowledge of statistics and research methods?

For the first two research questions, we employed a causal-comparative design with a control group. The purpose of causal-comparative research is to attempt to discover the main factor leading to differences among groups on a specified variable (Gay & Airasian, 2000). In this case, the two groups were participants in the Minority Research Fellowship program and a control group of students who were eligible for the program but did not participate, and the specified variable was entry and completion rates in graduate education programs. We used a pretest-posttest examination to address the third research question. Additional details about the study's methodology follow.

Methodology

The population for the study consisted of the 179 students who participated in and completed the minority fellowship program at UTK between 1987 and 1993. The control group consisted of 193 students who were eligible for the program but did not participate. All program participants and members of the control group had been undergraduate students with potential for graduate study at some time during the time frame that the program was funded.

Data Collection

We used a variety of data collection methods for this study. Before collecting information about participants' and control group members' academic performance, we first operationalized academic performance as GPAs and teacher recommendations. Then, we gathered the GPAs (reported on a 1.0-4.0 scale) of all students via review of records. To add depth to our measure of academic performance, we also gathered teacher recommendations for each student. Research has shown that recommendations by such individuals as teachers are significant predictors of successful graduate school performance (Piercy et al., 1995). Teachers rated each student on a scale of 1 (*lowest*) to 4 (*highest*) relative to how highly they would recommend that student for further opportunities in their field of study. In addition, they rated students on the same scale for dependability and cooperativeness, two areas frequently used on graduate school recommendation forms.

Follow-up cards were sent to the 179 students who had completed the minority fellowship program at UTK as well as to the 193 members of the control group. On the cards, students were directed to indicate whether or not they had entered a graduate program and then return the self-addressed, stamped card via mail. To gain further insights into students' postsecondary experiences, follow-up telephone interviews

were conducted with participants of the Talented Undergraduate Minority Research Fellowship program. Rigorous efforts were made to contact every participant. Over a 3-week period, phone calls were made to participants' current phone numbers as listed on their application files, to parents' phone numbers, to individuals listed as references on applications, and to participants' college alumni associations.

To measure the effect participation in the minority fellowship program had on students' knowledge of research methods, students completed a multiple-choice pretests-posttest examination on statistics and research methods. Questions on the test were designed to assess students' knowledge of basic research methods used in graduate study. Students completed the pretest and posttest at the beginning of the summer session and at the end of the summer session, respectively.

Data Analysis

Means and standard deviations were determined for GPAs and for teacher recommendations of each group. Differences between means were examined using *t*-tests. Regarding students' attainment of graduate education, we calculated percentages of students in each group who had matriculated to graduate study and then conducted a difference in proportions test to determine if the difference between the percentages was statistically significant. In the telephone interviews, all participants were asked about their educational status and outcomes, and responses were recorded. Means and standard deviations also were determined for program participants' performances on the pretest-posttest examinations on research methods. After ascertaining that the data were normally distributed, we used paired *t*-tests to explore significant differences in scores from the pretest-posttest examinations.

Findings

The 179 students who participated in and completed the Talented Undergraduate Minority Research Fellowship Program at UTK between 1987 and 1993 constituted the population for the study. The control group was comprised of 193 students who were eligible for the program but did not participate. Both groups were comprised primarily of racial/ethnic minorities, with African Americans constituting the largest segment of each group. Table 1 displays the demographic characteristics of both groups.

Comparison of GPAs and Teacher Recommendations Between Groups

After obtaining the GPAs of members from both groups via review of college records, we computed the mean and standard deviation for each group. We also computed means and standard deviations for the teachers' recommendations. Then, t-tests were used to examine if there were significant differences between the two groups. Results indicated that program participants had significantly higher mean GPAs and received significantly higher teachers' recommendations than did members of the control group. Table 2 displays these data.

Attainment of Graduate Degrees

To address the question of how program participants compare with control group members relative to graduate degree attainment, we gathered information via two sources. First, we mailed follow-up information cards to all participants who completed the program and to all members of the control group. We gathered information from 100% ($n = 179$) of program participants and from 56.5% ($n = 109$) of the control group via this method. Data were not available for the control group for the years 1991-1992 and 1993-1994. Table 3 displays the percentage of students attaining graduate degrees in both groups by cohort.

Table 2
Comparison of Performance Variables Between Groups

Performance Variables	Program Participants		Control Group		<i>t</i>	<i>df</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
College GPA	3.08	.40	2.91	.48	3.621	368	.001
Teacher Recommendation	3.63	.34	3.51	.42	2.820	346	.010
Cooperativeness	3.80	.31	3.74	.35	1.683	345	.093
Dependability	3.77	.29	3.69	.39	2.373	343	.018

Table 3
Percentage of Students with Graduate Degrees

Cohort	Program Participants		Control Group	
	<i>n</i>	% With Degrees	<i>n</i>	% With Degrees
1989-1990	46	78.3	46	19.6
1990-1991	45	55.6	45	15.5
1991-1992	31	48.4	*	*
1992-1993	28	53.6	18	11.1
1993-1994	29	51.7	*	*
Total	179	59.2	109	16.6

*Data were not available for the control group for these years.

Table 4
Comparison of Pretest and Posttest Scores

Cohort	<i>N</i>	Pretest		Posttest		<i>t</i>	<i>df</i>	<i>p</i>
		Mean	<i>SD</i>	Mean	<i>SD</i>			
1989-1990	44	35.09	10.57	62.77	9.61	16.96	43	<.001
1990-1991	36	34.64	10.15	58.78	11.16	10.07	35	<.001
1991-1992	31	38.97	11.18	59.26	9.79	9.10	30	<.001
1992-1993	26	36.73	11.64	56.58	15.42	7.46	25	<.001
1993-1994	29	40.28	9.76	57.10	10.90	9.86	28	<.001
Total	166	36.88	10.73	59.29	11.37	22.83	165	<.001

Because both samples satisfied the standard binomial requirement that both $n \times p$ and $n(1 - p)$ must be equal to or greater than 5 (where n = sample size and p = percentage), we were able to conduct a difference in proportions test. The results indicated that the percentage of program participants who had attained postsecondary degrees was statistically different (at the 99% confidence level) than the percentage of students in the control group who had attained postsecondary degrees.

Follow-up telephone interviews with program participants were conducted to discover further information about participants' postsecondary education experiences. Of the 179 participants who completed the program, 102 were contacted. Information was unavailable for the remaining 77 participants for varied reasons. One difficulty in locating participants was that, particularly for self-supporting students, a number of participants had listed their dormitory rooms or their places of part-time employment as current phone numbers on their applications. After leaving their college or university, students were no longer available at those numbers. Moreover, back-up numbers often were the numbers of fellow students who also had left school. Other barriers to reaching these students were that (a) families' phone numbers had been disconnected, (b) major professors and advisors had retired or left the school, and (c) some students had not updated their alumni office's information.

Of the 102 participants who were successfully contacted, 70 respondents had entered graduate school. The range of programs entered and the completion status were broad. Obviously, completion status might have been a function of the length of time out of the program and employment status. Thirteen respondents were enrolled in master's degrees programs; 39 respondents had received master's degrees; 6 respondents were enrolled in law school or doctoral programs (one of

these had received a master's degree as well). Twelve participants had received either a law degree or a doctoral degree, and one of these had received both a law degree and a master's degree in business administration.

Of the 32 respondents who had not entered a graduate degree program, 2 were still pursuing the baccalaureate degree on a part-time basis while working full-time. Other reasons for not entering graduate school were immediate need for full-time employment (23 respondents), entrance into a teaching career with definite plans to pursue a master's degree while teaching (5 respondents, and application to graduate school not accepted (1 respondent). One respondent who had earned a bachelor's degree in psychology had delayed graduate school while he earned a second bachelor's degree in nursing. Of those 32 respondents not entering graduate school, all reported continued interest in entering a graduate program at an indeterminate future time.

Pretest-Posttest Results

To investigate the program's influence on participants' knowledge of statistics and research methods, participants completed a pretest-posttest examination. We examined the two scores for each participant for correlation and found a positive Pearson correlation of .35 ($p < .001$). Then, we examined the gain score to ensure that it followed a normal distribution and performed a paired t-test to determine if the program had a positive impact on posttest scores. As noted in Table 4, there was a significant increase ($p < .001$) in posttest scores for each cohort, thus indicating that participants acquired significant knowledge regarding statistics and research methods.

Conclusion

Results from this study suggest that participation in a minority fellowship program improves academic performance. Improved academic performance leads to a host of other opportunities, including graduate study. Data from this study indicate that participation in a dry-run program exploring graduate school options positively affects the likelihood that minority students will enter graduate programs. Population and workforce trends suggest that increasing minority access to graduate study will be crucial for the welfare of the nation's economy (Darling-Hammond, 1997; Judy & D'Amico, 1997). Therefore, every reasonable effort must be made to support programs and interventions that support this cause.

Results from this study also indicate that specific instruction regarding statistics and research methods helps students to develop the skills and knowledge necessary to conduct research at the level required in graduate programs. Because minority students often attend secondary schools that do not provide them with strong foundation skills for conducting research (National Center for Education Statistics, 1997), this instruction can give them a cogent pathway to develop the skills and knowledge necessary to succeed in graduate study. Without this instruction, students may feel lost or too overwhelmed from their undergraduate experience to pursue graduate study. Furthermore, it is possible that developing these skills and knowledge might have positive effects on students' self-confidence and self-efficacy, thereby further increasing their likelihood of entering and

Participation in a dry-run program exploring graduate school options positively affects the likelihood that minority students will enter graduate programs.

succeeding in graduate school. Future research is necessary to explore possible links between instruction in statistics and research methods and self-confidence or self-efficacy regarding graduate school entrance and performance.

Although the Talented Undergraduate Minority Research Fellowship program has been eliminated legislatively, similar programs—including the McNair Scholars program—remain. Generalizing results from this study to other programs is not appropriate, but it is interesting to note the similar components found in other programs. For example, both the Talented Undergraduate Minority Research Fellowship program and the McNair scholars program have provided students with summer research internships. Identifying the specific program components that successfully impact access to graduate school and then replicating those components in other programs would be a positive step toward bridging the gap in graduate school admission and completion rates.

References

- Bane, M. J., & Winston, K. I. (1980). *Equity in higher education*. Cambridge, MA: Harvard University Graduate School of Education.
- Berger, R. (1991). Untapped sources for recruiting minority BSW students. *Journal of Social Work Education, 27*, 168-175.
- Blake, J. H. (Ed.). (1998). The full circle: TRIO programs, higher education, and the American future [Special issue]. *The Journal of Negro Education, 67*(4).
- Brewer, E. W. (1988). *Talented undergraduate minority research fellowship program*. Proposal for funding under Part A of Title IX of the Higher Education Act, CFDA No. 84.202, Pub. L. 99-498, 20 U.S.C. 1135-1134b.
- Brewer, E. W. (1989a). *A final report of the talented undergraduate minority research fellowship program at the University of Tennessee*. Report submitted to the U.S. Department of Education.
- Brewer, E. W. (1989b). *Talented undergraduate minority research fellowship program*. Proposal for funding under Part A of Title IX of the Higher Education Act, CFDA No. 84.202, Pub. L. 99-498, 20 U.S.C. 1135-1134b.
- Brewer, E. W. (1990). *Talented undergraduate minority research fellowship program*. Proposal for funding under Part A of Title IX of the Higher Education Act, CFDA No. 84.202, Pub. L. 99-498, 20 U.S.C. 1135-1134b.
- Brewer, E. W. (Ed.). (1992, Summer). What's happening. *Communiqué, 5*, 8, 16.
- Brewer, E. W. (Ed.). (1993, Summer). Selecting a graduate committee. *Communiqué, 7*.
- Bush, G. W. (2003, January 15). President Bush discusses Michigan affirmative action case [News release]. Retrieved March 13, 2003, from <http://www.whitehouse.gov/news/releases/2003/01/20030115-7.html>
- Case, D. O., & Richardson, J. V. (1990). Predictors of student performance with emphasis on gender and ethnic determinants. *Journal of Education for Library and Information Science, 30*, 163-182.
- Coles, A. S. (1998). TRIO achievers: The promise of the future. *The Journal of Negro Education, 67*, 432-443.
- Communiqué*. (1992, Summer).
- Council for Opportunity in Education. (n.d.). What is TRIO? In *About TRIO*. Retrieved March 20, 2003, from <http://www.trioprograms.org/home.html>
- Darling-Hammond, L. (1997). *Doing what matters most: Investing in quality teaching*. New York: National Commission on Teaching and America's Future.
- Fields, C. D. (1998). Hurdle #1: Getting in the door. *Black Issues in Higher Education, 15*(2), 16-21.
- Fries-Britt, S. (1998). Moving beyond Black achiever isolation: Experiences of gifted Black collegians. *The Journal of Higher Education, 69*, 556-576.
- Garcia, T. (1993, April). *Women and minorities in science: Motivational and cognitive correlations in achievement*. Paper presented at the annual meeting of the Educational Research Association, Atlanta, GA.
- Gay, L.R., & Airasian, P. (2000). *Educational research: Competencies for analysis and application* (6th ed.). Upper Saddle River, NJ: Prentice-Hall.
- Grimmett, M. A. S., Bliss, J. R., & Davis, D. M. (1998). Assessing federal TRIO McNair program participants' expectations and satisfaction with project services: A preliminary study. *The Journal of Negro Education, 67*, 404-415.
- Hawkins, B. D. (1993). Educators push for diverse grad school admission criteria. *Black Issues in Higher Education, 10*(10), 26-30.
- Hesser, A., & Lewis, L. (1992). Prematriculation program grades as predictors of Black and other nontraditional students first-year academic performances. *Academic Medicine, 67*, 605-607.
- Hodgkinson, H. (1993). American education: The good, the bad, and the task. *Phi Delta Kappan, 74*, 619-623.
- Hoyte, R. M., & Collett, J. (1993). 'I can do it': Minority undergraduate science experiences and the professional career choice. *New Directions for Teaching and Learning, 53*, 81-90.
- Hrabowski, F. A. (1991). Helping gifted Black males succeed in science. *Journal of Health Care for the Poor and Underserved, 2*, 197-201.
- Hrabowski, F. A., & Pearson, W. (1993). Recruiting and retaining talented African-American males in college science and engineering. *Journal of College Science Teaching, 22*, 234-238.
- Ishiyama, J. T., & Hopkins, V. M. (2001, April). Assessing the impact of the McNair program on students at a public liberal arts university. *Opportunity Outlook, 20*-24.
- Jordan, D. & Williamson, L. (1990). Transition of agricultural students from undergraduate to graduate school: The minority student's dilemma. *Journal of Agronomic Education, 19*(1), 3-7.
- Juarez, C. E. (1991). Recruiting minority students for academic careers: The role of graduate student and faculty mentors. *Political Science and Politics, 24*, 539-540.
- Judy, R. W., & D'Amico, C. (1997). *Workforce 2020: Work and workers in the 21st century*. Indianapolis, IN: Hudson Institute.
- Keller, E. J. (1988). Crisis in graduate education for minorities. *Journal of State Government, 61*, 62-65.

About the Authors

- London, H. B. (1992, Winter). Transformations: Cultural challenges faced by first-generation students. *New Directions for Community Colleges*, 80, 5-11.
- Lords, E. (2001). Recruiting talent: Indiana University-Purdue University Indianapolis graduates the first participants in its research scholars program. *Black Issues in Higher Education*, 18(8), 26-28.
- Maddox, A. B., & Smith-Maddox, R. P. (1990). Developing graduate school awareness for engineering and science: A model. *The Journal of Negro Education*, 59, 479-490.
- Maton, K. I., Hrabowski, R. A., & Schmitt, C. L. (2000). African American college students excelling in the sciences: College and postcollege outcomes in the Meyerhoff Scholars Program. *Journal of Research in Science Teaching*, 37, 629-654.
- Mooney, C. J. (1989, August 2). Affirmative action: Action goals, coupled with tiny number of minority Ph.D.s set off faculty recruiting frenzy. *Chronicle of Higher Education*, 35(47), A1, A10-A11.
- National Center for Education Statistics. (1997). *The condition of education 1997* (NCES 97-388). Washington, DC: U.S. Government Printing Office.
- National Task Force on Minority High Achievement. (1999). *Reaching the top: A report of the national task force on minority high achievement*. New York: College Board Publications.
- Nnadozie, E., Ishiyama, J., & Chon, J. (2001). Undergraduate research internships and graduate school success. *Journal of College Student Development*, 42, 145-156.
- Piercy, F. P., Dickey, M., Case, B., Sprengle, D. H., Beer, J., Nelson, T., et al. (1995). Admissions criteria as predictors of performance in a family therapy doctoral program. *American Journal of Family Therapy*, 23, 251-259.
- Richardson, R. C., & Skinner, E. F. (1992, Winter). Helping first-generation minority students achieve degrees. *New Directions for Community Colleges*, 80, 29-42.
- Sondgeroth, M. S., & Stough, L. M. (1992, April). *Factors influencing the persistence of ethnic minority students enrolled in a college engineering program*. Paper presented at the meeting American Educational Research Association, San Francisco.
- Taylor, M., & Jackson, C. (1989). *Educational opportunity fund legal studies program*. Washington, DC: American Association of State Colleges and Universities. (ERIC Document Reproduction Service No. ED316101)
- Woolston, C., Hrabowski, F. A., & Maton, K. I. (1997). The recruitment and retention of talented African Americans in science: The role of mentoring. In H. T. Frierson, Jr. (Ed.), *Diversity in higher education: Mentoring and diversity in higher education* (pp. 103-114). Greenwich, CT: JAI Press.



Dr. Ernest W. Brewer is a Professor in the Department of Educational Administration and Policy Studies in the College of Education, Health, and Human Sciences at The University of Tennessee. In addition, he is the Principal Investigator/Director of TRIO Programs, which include Talent Search, two Upward Bound programs, Math and Science Regional Center, Veterans' Program, and Educational Opportunity Center.

Ms. Jama McMahan Landers is a graduate student majoring in Human Resource Development at The University of Tennessee-Knoxville. She has served as the Assistant Editor for two peer-reviewed journals, including the *Journal of Educational Opportunity*. She also taught for the Math and Science Regional Center.