Tracey, T. J., & Sedlacek, W. E. (1984). Noncognitive variables in predicting academic success by race. *Measurement and Evaluation in Guidance, 16,* 171–178.

Tracey, T. J., & Sedlacek, W. E. (1985). The relationship of noncognitive variables to academic success. A longitudinal comparison by race. *Journal of College Student Personnel, 26,* 405–410.

Tracey, T. J., & Sedlacek, W. E (1987). Prediction of college graduation using noncognitive variables by race. *Measurement and Evaluation in Guidance, 19,* 177–184.

Vogt, W. P. (1997). *Tolerance & education: Learning to live with diversity and difference.* London: Sage.

Jerry A. Jacobs

Gender and the Stratification of Colleges

It has been twenty-five years since the United States Congress passed Title IX of the Education Amendments of 1972, which banned discrimination in education based on sex (Chamberlain, 1988).[1] Since that time, women have made substantial progress in terms of access to higher education. Women now constitute the majority of associate and other two-year degree recipients, the majority of bachelor's degree recipients, about half of master's and professional degree recipients, and nearly 40% of doctoral degree recipients. In terms of sheer numbers of degrees, then, women have more than attained parity with men. On the other hand, women are segregated from men in the fields of study they pursue. Differences in this aspect of education narrowed during the late 1960s, 1970s, and early 1980s but have stabilized since 1985. Female college graduates continue to trail their male counterparts in earnings (Jacobs, 1995, 1996a).

Another important aspect of gender differentiation in higher education is the distribution of women and men across institutions. Several studies have suggested that women are not equally represented at top-tier institutions (Hearn, 1990; Persell, Catsambis, & Cookson, 1992; Davies & Guppy, 1997). In this article I assess whether women have attained parity with men in terms of graduation from elite colleges. I draw on comprehensive data on degrees obtained from all institutions awarding bachelor's degrees. I examine gender differences in average school

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standing as well as graduation from elite schools. I also examine whether women have made progress relative to men since 1970 with respect to college ranking.

The Stratification of Colleges

As enrollment in college becomes more common, competition for status shifts to obtaining a degree from an elite school. College ranking is associated with later-life earnings. In other words, those obtaining their degrees at higher status institutions earn more on average than those obtaining their degrees at less prestigious schools. Pascarella and Terenzini (1991) review studies in this area and do not resolve the question of whether graduates of elite schools do better because of the effect of the schools or because of the greater selectivity of students. However, more recent studies, which often include careful controls, provide an accumulating body of evidence that college ranking does indeed affect subsequent student outcomes (Behrman, Rosenzweig, & Taubman, 1996; Kingston & Smart, 1990; James, Absalam, Conaty, & To, 1989).[2] Economists refer to these as "college quality" effects. Sociologists have suggested that, in addition to greater technical skills, these earnings effects may represent greater social skills or social networks, or they may simply reflect status certification effects (Ishida, Spilerman, & Su, 1997; Lee & Brinton, 1996; Useem & Karabel, 1990; Kingston & Lewis, 1990; Coleman, 1988; Bourdieu & Passeron, 1977). No matter what interpretation we may place on these findings, if women do not obtain their degrees at schools of equal stature to those of men, then they will not garner the same benefits from their college education as their male counterparts. As bachelor's degrees become more common, one would expect the distinctions among bachelor's degree recipients to become ever more salient. Indeed, some evidence suggests that in recent years the importance of college standing has increased (Daniel, Black, & Smith, 1997a, 1997b).

Gender Differences in College Standing

Hearn (1990) and Persell et al. (1992) report that women trailed men in access to elite schools, based on an analysis of data on 1980 high-school seniors. Hearn reports that 45% of students at top institutions were female, compared with 40% in moderately selective and 51% in non-selective colleges, based on his analysis of the High School and Beyond data. (Hearn defined elite schools as those with average SAT scores above 1,176 in 1980. See also Hearn, 1991, 1992).

Persell et al. (1992) defined selective schools as those where entering students had an average SAT score of 1050 or more. The average young woman graduating from a public high school was estimated to have a 4.2% chance of attending an elite college, compared with 5.8% for male students. Persell et al. (1992) also examined the college attendance patterns of graduates of elite boarding schools. Just as high a fraction of female as male graduates of these schools attended elite schools, but being female had a negative effect once other factors were controlled.

On the other hand, women have made progress since 1980, both in terms of overall enrollments in higher education as well as representation in elite institutions (Karen, 1991). Karen reports that the proportion of women at Ivy League schools rose from 22.5% in 1960 to 43.3% in 1986, and at other prestigious institutions (excluding the Seven Sister Schools) from 26.4% in 1960 to 46.7% in 1986.

The first question to be addressed in this article, then, is whether women trail men in the standing of the schools in which they obtain their degrees. I will assess whether there are gender differences in average school standing as well as in representation among elite schools. As we will see, the evidence suggests that there are modest differences between men and women that are consistent across a range of measures of school standing.

If there is a gender gap in school standing, this gap could be due to many different factors. Parents might be reluctant to spend as much on their daughters' educations as on their sons'; parents might favor sons because they hold traditional sex-role attitudes, such as those commonly found in developing countries (Kelly, 1989; Kelly & Slaughter, 1991; King & Hill, 1993) or in order to maximize the cumulative lifelong earnings of their offspring (Becker, 1981).

Contemporary evidence of greater parental investment in daughters over sons is scant (Behrman, Pollack, & Taubman, 1986). Steelman and Powell (1991) reported that parents were less willing to go into debt to pay for college expenses for their daughters than for their sons, but on four other measures of parental investments the gender differentials were not statistically significant. In another article Steelman and Powell (1989) reported that parents were more likely to contribute financial support to their daughters and provide them more money for college than they did their sons (perhaps because the daughters had less money in savings). Daughters were also less likely to report financial barriers as a reason for not attending college.

Evidence from the annual national freshman surveys suggests that freshman women receive as much financial support from their families as do men. In 1996, 82.3% of freshman women reported financial support from their families, compared with 79.7% of men. Women led men slightly in the proportion reporting at least $1,500 in parental financial support (59.3% versus 58.8%) (Cooperative Institutional Research Program, 1996). On the other hand, freshman women were more likely than their male counterparts to report "major" concern about financing their education and were more likely to indicate that low tuition was a very important factor in selecting their college (Jacobs & Kao, 1998). National data on student aid indicate that in 1993 women college students were slightly more likely to receive government grants and loans than were men, but the support levels were greater for men than for women (U.S. Department of Education, 1996, p. 324).

I was initially skeptical that there were gender differences at all in college status. My expectation was that gender differentiation was significant within institutions, in terms of the gender segregation of major fields of study, but I expected few if any gender differences in college status. Any gender effect on college ranking should also be evident in terms of college attendance rates. Because women are now the majority of degree recipients, I did not place much credence in the idea that parents were reluctant to invest in their daughters. Comparisons of recent cohorts show the steady progress of women to higher education (Alexander, Pallas, & Holupka, 1987; Mare, 1995). I expected similar progress for women in terms of college standing.

Institution Attributes and Gender Differentiation

When the evidence did suggest modest gender differences in representation among elite institutions, I developed and tested several institutional-level explanations of these differences. The explanations offered above focus instead on the traits individuals bring with them to college. Institutional explanations might help to account for the difference between women's steady progress in representation in higher education and persistent differences in college standing. A number of scholars, most notably Karen (1991), have stressed the role that institutions may play in shaping the social contours of education. Persell et al. (1992) discuss their findings in an institutional context as well.

The first institutional factor that might influence gender equity in college standing is the fields of study offered at different schools. Most research views college majors as differentiating men and women within schools, but not affecting the distribution of men and women across schools. This perspective assumes a university model where all or nearly all subjects are offered at all institutions. The inter-school aspect of majors became evident to me when I examined data on reports on admissions as well as enrollment from selected leading institutions published in 1995 in the now-defunct *Monthly Forum on Women in Higher Education* (see Table 1).

The data indicate that women are well represented among recent entering classes, except in schools that prominently feature engineering programs. Table 1 reproduces the *Monthly Forum* data on leading universities and leading liberal arts colleges. One conclusion that is immediately obvious from the university figures is that schools with large engineering programs often have substantial majorities of male students. The three institutions with less than 40% women among entering freshmen were CalTech, Johns Hopkins, and Carnegie Mellon, all schools well known for their engineering programs. On the other hand, of the 24 included in the *Monthly Forum* data, 13 had more than 50% women among entering students.

The representation of women among the top-tier liberal arts institutions was even more favorable. The lowest percentage female of the schools included in this list were Washington and Lee, with 41.9%, Claremont, with 44.9%, and Amherst, with 45.7%. Most of the others had a female majority, with Oberlin at 60.2% female, enrolling the largest percentage of women. Of the 20 schools listed (excluding the 3 all-female schools), 14 enrolled more than 50% women in the 1995 freshman class. Women seem well represented in these entering classes, apart from the schools that emphasize engineering education.

As we will see, engineering programs tend to be featured in schools that are more selective than average. Men's disproportionate representation in engineering programs thus places them in colleges that are above average in college standing. Schools of education, in contrast, tend to be located in colleges and universities with below-average standing. Thus, women's overrepresentation in education programs tends to pull down the average standing of the colleges in which they are enrolled.

Engineering and education programs tend to be offered in schools that feature a variety of other degrees. These may affect the distribution of men and women by shifting the balance of men and women students at different schools. A more extreme case of institutional specialization is the single-sex school, where degrees are offered only to men or women. I will also explore the extent to which single-sex institutions affect the distribution of men and women across colleges.

Part-time enrollment is a second institutional factor that influences the gender distribution of college standing. Over forty percent (41.7%) of undergraduate students enrolled in the fall of 1993 were attending college or university part time. Women are more likely than men to be enrolled in college part time. Women comprised the majority of part-time students (59.1%) (U.S. Department of Education, 1996).

TABLE 1

Admission of Women to Leading Universities and Liberal Arts Colleges, Fall 1995

ADMISSION OF WOMEN AT TOP-TIER* UNIVERSITIES FOR THE FALL OF 1995

Institution	Total Women Applicants	Total Women Accepted	Women Acceptance Rate	Total Men Applicants	Total Men Accepted	Men Acceptance Rate	Women Enrollees	Women Student Yield+	Women % of Freshman Class
Harvard	**	**	**	**	**	**	728	**	45.7%
Princeton	**	979	**	**	1,031	**	**	**	**
Yale	**	**	**	**	**	**	694	**	50.7
MIT	2,424	948	39.1	5,464	1,165	21.3	480	50.6	42.1
Stanford	7,433	1,495	20.1	7,957	1,412	17.7	867	60.0	53.6
Duke	7,295	2,074	28.4	7,142	2,050	28.7	842	40.6	52.0
CalTech	400	133	33.3	1,493	378	25.3	52	39.1	23.9
Dartmouth	**	1,113	**	**	1,257	**	525	47.2	50.0
Columbia	4,592	1,052	22.9	4,122	990	24.0	454	43.2	50.2
Univ. of Chicago	2,601	1,487	57.2	3,245	1,690	52.1	506	34.0	47.7
Brown	7,561	1,503	19.9	6,337	1,289	20.3	724	48.2	53.5
Rice	**	888	**	**	842	**	328	36.9	51.0
Univ. of Penn.	6,779	**	**	8,294	**	**	1,204	**	51.0
Northwestern	6,597	**	**	6,329	**	**	1,129	**	54.6
Cornell	**	**	**	**	**	**	1,483	**	46.3
Emory	**	**	**	**	**	**	698	**	54.7
Univ. of Virginia	9,467	3,546	37.5	8,428	3,000	35.6	1,576	44.4	53.9
Vanderbilt	4,342	2,520	58.0	4,537	2,632	58.0	790	31.3	48.3
Notre Dame	4,690	1,830	39.0	5,309	1,870	35.2	855	46.7	45.4
Washington	4,833	2,743	56.7	4,456	2,515	55.3	630	23.0	51.3
Univ. of Michigan	**	**	**	**	**	**	2,586	**	48.0
Johns Hopkins	3,551	**	**	4,324	**	**	343	**	38.3
Univ of Cal., Berkeley	11,497	4,348	37.8	11,283	4,419	39.2	1,703	36.6	49.1
Carnegie Mellon	3,361	1,886	56.1	6,946	3,747	53.9	395	20.9	30.7
Georgetown	6,991	1,514	21.7	5,884	1,335	22.8	756	49.9	52.9

*As rated by *U.S. News & World Report*. Colleges are listed in rank order.
**Declined to provide statistics to FWHE research department.
+Yield = percentage of accepted students who enroll.
Source: *FWHE* survey of college and university admissions offices.

ADMISSION OF WOMEN AT TOP-TIER* LIBERAL ARTS COLLEGES FOR THE FALL OF 1995

Institution	Total Women Applicants	Total Women Accepted	Women Acceptance Rate	Total Men Applicants	Total Men Accepted	Men Acceptance Rate	Women Enrollees	Women Student Yield+	Women % of Freshman Class
Amherst	2,502	487	19.5%	2,334	443	19.0%	192	39.4%	45.7%
Williams**									
Swarthmore	1,945	651	33.5	1,579	561	35.5	193	29.6	53.5
Wellesley	3,411	1,344	39.4	NA	NA	NA	586	43.6	100.0
Pomona	2,005	622	31.0	1,581	608	38.5	192	30.9	48.2
Bowdoin	2,092	660	31.5	2,030	593	29.2	231	35.0	50.5
Haverford	1,351	525	38.9	1,367	460	33.7	166	31.6	52.9
Davidson	1,538	529	34.4	1,521	522	34.3	223	42.2	51.6
Wesleyan	3,158	1,080	34.2	2,343	866	37.0	355	32.9	50.3
Carleton	1,547	763	49.3	1,119	678	51.9	235	30.8	49.8
Middlebury	2,091	786	37.6	1,727	581	33.6	320	40.7	51.9

TABLE 1 (Continued)

ADMISSION OF WOMEN AT TOP-TIER* LIBERAL ARTS COLLEGES FOR THE FALL OF 1995

Institution	Total Women Applicants	Total Women Accepted	Women Acceptance Rate	Total Men Applicants	Total Men Accepted	Men Acceptance Rate	Women Enrollees	Women Student Yield†	Women % of Freshman Class
Claremont	1,055	413	39.1	1,119	469	41.9	129	31.2	44.9
Smith	3,333	1,624	48.7	NA	NA	NA	651	39.6	100.0
Bryn Mawr	1,719	999	58.1	NA	NA	NA	340	34.0	100.0
Washington & Lee	1,619	439	27.1	1,827	635	34.8	188	42.8	41.9
Vassar**									
Grinnell	1,223	820	67.0	940	626	66.5	205	25.0	52.3
Colgate	2,988	1,213	40.1	3,017	1,022	33.9	385	31.7	50.7
Oberlin	2,267	1,729	76.2	1,461	962	65.8	417	24.1	60.2
Colorado	1,936	1,125	58.1	1,490	750	50.3	316	28.1	57.1
Bates	1,920	742	38.6	1,585	545	34.3	252	34.0	56.0
Trinity	1,478	911	61.6	1,576	830	52.7	247	27.1	48.4
Colby	2,108	**	**	2,111	**	**	308	**	52.9
Holy Cross	1,808	940	52.0	1,728	832	48.1	406	43.2	53.9
Bucknell	6,597	3,641	55.2	3,187	1,798	56.4	480	26.7	51.8

NA = Not applicable as college accepts only women.
*As rated by *U.S. News & World Report.* Colleges are listed in rank order.
**Declined to provide statistics to FWHE research department.
†Yield = percentage of accepted students who enroll.
Source: *FWHE* survey of college and university admissions offices.

SOURCE: Monthly Forum on Women in Higher Education, October 1995.

Women older than traditional college-age students represent the majority of part-time female students. More than one third (36.6%) of undergraduate students enrolled in the fall of 1993 were over age 24, including 17.1% of full-time students and 63.9% of part-time students. Women represent 60.2% of these older students, including 54.6% of those enrolled full time and 61.8% of those enrolled part time (U.S. Department of Education, 1996; see also Hearn, 1992). Thus, the majority of older students attending college are enrolled part time, and the majority of these are women.

Yet elite institutions tend to accept relatively few part-time students. On average, as we will see, the proportion of students enrolled part time is negatively related to the status of the institution. Women's overrepresentation among part-time students also tends to lower the status of the institutions in which they receive their degrees.

Some may view major field of study and part-time status as individual rather than institutional variables. There is indeed an element of choice in each of these areas. However, the relationship of these attributes to college standing is not a matter of individual choice. In other words, choosing a school that features a specialty in elementary education generally means choosing not to enroll in an elite institution. Similarly, deciding to enroll part time for all practical purposes means that most elite programs are off limits. The link between these offerings and college standing is an institutional arrangement that is featured in this research.

Another possible systemic explanation of women's underrepresentation at elite institutions is that standardized tests might be biased against women (Jacobs & Seliktar, 1998). Critics have charged that SAT scores underpredict women's performance in college (Wainer & Steinberg, 1992; Willingham & Coles, 1997). Some indirect evidence regarding the role of SAT scores in college assignment can be gleaned from the national freshman surveys. Freshman women were slightly more likely than men to be enrolled in their first choice school. Women on average applied to slightly fewer schools than men, but were accepted at slightly more of them (Cooperative Institutional Research Program, 1996). These data do not suggest that SAT scores have a detrimental impact on women, but they are not definitive, because they do not indicate the standing of the schools to which men and women apply.

I do not assess the predictive validity of SAT scores in this article, but I test the impact of SAT scores on school status indirectly. If other factors account for women's underrepresentation in elite schools, then we may conclude that tests biased against women do not cause the differential placement of women and men. (On the other hand, if tests are biased against women, then perhaps the removal of such biases might produce an even greater representation of women in elite institutions.)

A final possible institutional factor is the reluctance of high-status schools to admit too many women. Historical evidence from the early years of the twentieth century indicates that prominent schools such as the University of Chicago and Stanford put a lid on female enrollment for fear of becoming female-dominated schools (Solomon, 1985; Schwager, 1987). A recent article in the *Chronicle of Higher Education* (Gose, 1997) suggests that these concerns are reemerging in some private liberal arts colleges with majority-female enrollment.

Private colleges might be reluctant to admit too many women because they fear that it devalues their institution. College officials might also fear that female alumnae might contribute less than do male alumni, either because of their lower earnings or the tendency for family donations to go the schools that husbands attended. Title IX does not prevent private schools from taking sex into account as a factor in admissions. If there is a sex gap in school status that remains after relevant factors are controlled, then the possibility of institutional bias in admissions against women would have to be considered. This does not appear to be the case in Table 1, but we will reserve judgment until the analysis is complete. The second goal of the article, then, is to assess the role of these institutional factors in explaining gender differences in graduation from elite schools.

Data and Methods

I examined the distribution of men and women among colleges with data on earned degrees conferred. The data were assembled by the Department of Education in the HEGIS database.[3] They have been made accessible to researchers on line via the CASPAR system.[4] These data have many virtues: they represent a comprehensive accounting of all degree recipients, they are available annually during the period 1966–1993, and they allow for analysis between schools as well as variation by major within schools. The analysis presented here develops a clear picture of the relationship between gender and college degree attainment.

There are also important limitations to these data that must be noted: they pertain to college-degree recipients and thus do not directly examine college entrance or the college experience per se. These results would be misleading with respect to college entrance if men's and women's completion rates differed sharply. These data also do not allow us to control for individual attributes in the college selection process. In that sense, we are unable to determine whether women and men are being placed into college and universities in relation to their abilities, their social backgrounds, or according to other factors. As a result, we are unable to assess whether gender has a net effect on the process of selection into elite schools. Nonetheless, it is useful to have an assessment of the association between gender and college stratification, even if the process has not been fully explicated.

I began selecting colleges from the 3,867 academic institutions included in the CASPAR database for 1993. I then excluded 1,338 two-year institutions, based on the Carnegie classification system. Of the 2,529 remaining schools, 770 granted no bachelors degrees in 1992, leaving 1,759 schools.[5]

Women are overrepresented in two-year institutions, and the exclusion of these schools could be seen as affecting the results presented here. I excluded two-year institutions for both practical and theoretical reasons. Data on college selectivity is not readily available on the large number of two-year institutions. Thus, as a practical matter, including these schools in the analysis would have been difficult, if not impossible.

On theoretical grounds, I consider two-year institutions to be a separate level of higher education worthy of study in its own right and with its own substantive issues. (Master's, professional, and doctoral programs are also excluded from the analysis on the grounds that these represent different levels of higher education that need to be studied in their own right). Two-year schools incorporate both terminal and transfer degree programs. Their academic and vocational programs are highly segregated by sex (Jacobs, 1985). High rates of attrition and low rates of transfer to four-year schools are among the many important issues that need to be examined for two-year schools. These topics are different in degree and in kind from those confronting four-year institutions and from the issues examined here.

It should be noted that the impact of two-year schools on the bachelor's degree attainment process is indirectly included in this analysis. If women are more likely to enroll in two-year programs and then transfer to four-year schools than are men, and if this process channels women into less elite institutions, then this outcome will be reflected in our analysis of college graduates. The data examined here will not pinpoint this process as the cause of the gender differential, but it will incorporate it as part of the overall assessment of gender and college stratification.

I merged a variety of data on college rankings with the CASPAR data on degrees earned. These data were obtained from the 1991 *U.S. News and World Report* data on colleges. The measures I employed included: average SAT scores, acceptance rate, percentage of faculty with PhDs, student/faculty ratio, graduation rate, first-year retention rate, in-state tuition fees, and percentage enrolled part time.[6]

The *U.S. News* data are useful because they include such a wide range of measures of school standing. The principal drawback is that data are missing for smaller schools. For example, nearly one quarter of the schools (23.9%) were missing data on SAT scores. These schools are, on average, among the less prominent institutions. If women were overrepresented at such schools, then our results on gender inequality would be understated. Fortunately, for the sake of this analysis, gender disparity in attendance at such schools is quite small. There is less than a one percentage point difference between women's and men's concentration in the missing schools (12.7% of women versus 11.9% of men). Schools with missing SAT data are smaller than the average institution, and thus the fraction of degree recipients missing from our analysis is smaller than the fraction of missing schools. I conducted additional analyses (described below) using more comprehensive SAT data from another source for an earlier year and am reassured that the results presented below are not affected by the problem of missing data.

The analysis proceeds as follows. First, I compared the distributions of men and women across institutions. I calculated an index of dissimilarity to discern what fraction of men or women would have had to change schools in order to be distributed in the same manner as the other sex. Second, I weighted schools by the number of men and women to determine whether men and women attended schools of equal standing. Third, I estimated a series of ordinary least squares regression equations with school characteristics as predictors to determine whether the gender differences in school standing could be explained. Finally, I calculated a series of logistic regression equations that attempted to explain gender differences in graduation from elite schools.

Results

1. Sex Segregation Between Schools

There were 72 schools with only male graduates, nearly all schools offering religious instruction, with VMI, Citadel, and a few engineering and technical schools comprising the balance. Only 3,375 men received degrees at these schools, 0.6% of male bachelor's degree recipients. Another 42 schools graduated only women, which included 8,437 graduates (which represented 1.3% of women bachelor's degree recipients that year). Single-sex schools by themselves are responsible for very little segregation by sex between institutions.

Overall, in 1993, 14.5% of women would have had to change schools in order to be distributed in the same manner as men. Although this figure is somewhat higher than I expected, it is low relative to most measures of segregation. For example, the level of segregation by sex by major within schools is twice as high as segregation across schools (D = 30; Jacobs, 1996b). Also instructive is to compare sex segregation to racial segregation across schools. Calculated with the same data for the same year, 40.2% of African-Americans would have to change colleges or universities in order to be distributed in the same manner as whites (Jacobs, 1996b).

2. Gender and College Standing

Were women concentrated in low-status schools in 1993? Table 2 presents means of these indicators, weighted by the distribution of male and female degree recipients. In 1993 women remained in slightly lower status institutions than their male counterparts. The differences between men and women were not great, but they were consistent across a wide range of measures that are indicative of institutional status or quality. Women, compared to men, receive degrees from institutions with slightly higher acceptance rates, higher student/faculty ratios, lower standardized test scores, and lower fees. Though I expected the narrowing of the gender gap in institutional ranking described by Karen to have eliminated any remaining differences by 1993, this expectation was not borne out in the data.

The sex gap in college status documented in Table 2 can be explained by two factors: (1) the relative scarcity of women in schools with large engineering programs, because engineering programs are typically male-dominated and tend to be more selective than higher education on average; and (2) the tendency of women to enroll in school part time, because lower-status institutions are more likely to accept part-time students.

I hypothesized that institutional factors such as engineering enrollment would help to explain the gender differential in representation in high-status institutions. This hypothesis assumes that men comprise the majority of engineering students and that these programs are disproportionately represented in high-status institutions. The same logic—applied in reverse—would hold for part-time enrollment and schools of education. If these institutional factors contribute to women's representation in lower-status institutions, then it must be the case that women are overrepresented in them and that they are concentrated in lower-status institutions.

Evidence on these points is presented in Table 3. Engineering programs are indeed concentrated in above-average institutions. The correlation between the proportion of students obtaining their degrees in engineering and the average SAT scores of the institution in 1993 was

TABLE 2
Sex Differences in College Rankings, 1993

	Women	Men
	Mean (*SD*)	Mean (*SD*)
Average SAT	961.3 (191.1)	979.4 (154.9)
Percent in schools with mean SAT over:		
1200	4.5 (29.9)	7.0 (28.6)
1100	14.0 (49.7)	17.4 (42.5)
1000	37.8 (69.5)	43.3 (55.6)
Acceptance rate	71.3 (22.8)	70.7 (18.8)
First-year retention rate	77.3 (16.3)	78.1 (12.8)
Graduation rate	48.6 (25.7)	49.9 (20.3)
Percent of faculty with PhDs	77.0 (22.8)	78.2 (18.0)
Student/faculty ratio	16.4 (6.7)	16.2 (5.4)
In-state tuition fees	$4520.9 (6146.9)	$4610.5 (4978.5)
Percent enrolled part time	20.3 (21.5)	18.8 (16.0)

All female/male differences are statistically significant, $p < 0.01$.

TABLE 3
Engineering, Education and Part-time Enrollment by Average SAT Score at College or University

Average SAT Score (*n* schools)*	Percent of Students		
	Enrolled in Engineering	Enrolled in Education	Enrolled Part Time
1200+ (64)	14.1%	0.4%	3.6%
1100–1199 (95)	7.9	4.1	8.9
1000–1099 (206)	5.3	7.1	14.1
900–999 (322)	2.4	12.1	21.7
800–899 (335)	1.4	15.3	26.0
Less than 800 (204)	1.0	18.2	24.9
SAT missing (533)	1.7	10.4	31.1
Correlation with SAT	0.28	–0.41	–0.36

*The number of schools for part-time enrollments are 43, 80, 192, 314, 325, 185 and 72.

moderately strong (r = 0.28). Education programs, in contrast, were concentrated in lower-status institutions. The correlation between the proportion obtaining their degrees in education and the average SAT score of the institution was negative (r = –0.41). Women in 1993 obtained three-quarters (76.9%) of the education degrees, and men garnered five-sixths (84.1%) of the engineering degrees. Thus, women's concentration in education would be expected to lower the average standing of the schools in which they attained their degrees, whereas men's concentration in engineering would be expected to raise their average school ranking.[7]

Part-time enrollment is also inversely related to college standing. The correlation between average SAT score and the percentage enrolled part time was negative (r = –0.36). Only 3.6% of students in elite schools (those with combined average SAT scores of 1200 or better) were enrolled part time, whereas over 20% of those attending schools with average combined SAT scores of 900 or less were enrolled part time.

Table 4 presents several regression equations which demonstrate that these two factors account for the sex gap in college quality. I present several nested comparisons. In the first equation, the percentage female in a school is the sole independent variable. In the second equation, I add the percentage of students receiving their degrees in engineering. In the third equation, I add the percentage of students enrolled part time.

In the first set of equations, average SAT score is the dependent variable. The first equation shows that women trail men in this measure of college standing. The effect is cut from 28 points to less than 13 points when the proportion of engineering majors is controlled. When the proportion of part-time students is added to the analysis, the gender gap in SAT scores declines to less than 10 points, and the differential is no longer significant.[8]

The proportion enrolled in education has a negative effect on a school's average SAT score. The size of this effect is somewhat larger than that observed for engineering, but it is in the opposite direction. However, education enrollment does not explain as much of the sex differential in average SAT score as does engineering enrollment. Adding education to the final model reported in Table 4 does not significantly change the other results reported there.[9]

In the second set of equations, similar findings for acceptance rates are presented. In this case, engineering has relatively little effect, whereas part-time enrollment is the principal factor that accounts for the sex differential. In this analysis, as in the case of the average SAT score, the sex differential is no longer statistically significant after these two factors are accounted for. The analysis of graduation rates is even more

TABLE 4
Regression Analysis of Sex Gap in College Rankings

	Dependent Variable: Average SAT		
Predictors	Model 1	Model 2	Model 3
Intercept	1075.11*** (16.03)	1010.93*** (18.88)	988.58*** (17.73)
Percent female	−2.46*** (0.31)	−1.51*** (0.29)	−0.23 (0.27)
Percent engineering		2.62*** (0.42)	2.98*** (0.40)
Percent part time			−2.77*** (0.22)
R^2	0.06	0.09	0.18

	Dependent Variable: Acceptance Rate		
Predictors	Model 1	Model 2	Model 3
Intercept	67.32*** (1.86)	68.53*** (2.20)	72.07*** (2.17)
Percent female	0.12*** (0.03)	0.10** (0.03)	0.01 (0.04)
Percent engineering		−0.05 (0.05)	−0.01*** (0.05)
Percent part time			.12*** (0.03)
R^2	0.01	0.01	0.02

	Dependent Variable: Graduation Rate		
Predictors	Model 1	Model 2	Model 3
Intercept	55.96*** (2.10)	51.90*** (2.48)	48.86*** (2.46)
Percent female	−0.10*** (0.04)	−0.04 (0.04)	0.12** (0.04)
Percent engineering		0.17*** (0.06)	0.20*** (0.06)
Percent part time			−0.32*** (0.03)
R^2	0.01	0.01	0.11

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

striking. The sex differential disappears for graduation rates once engineering and part-time enrollment are controlled in the multivariate analysis.

I conducted similar analyses for each of the measures of college standing presented in Table 2, and the result was always the same: gender differences in each of the outcome measures were initially evident but became attenuated and eventually failed conventional tests of statistical significance once the control measures were added to the analysis.

I was especially interested in the SAT score differential, because earlier studies relying on SAT scores found women underrepresented in elite schools. The analysis of the sex gap in SAT scores presented in Table 4 showed that sex difference in school means could be accounted for by the two variables examined, percentage enrolled in engineering and percentage enrolled part time. However, this similarity in means could be consistent with women's underrepresentation at the high end of the distribution, namely elite schools. I sought to replicate more closely the research of Hearn and Persell by using cutoff scores for elite schools. I used several measures in order to determine whether the results were sensitive to particular cutoff values. Thus, I defined elite schools as those with an average SAT score of 1200 or better, 1100 or better, and 1000 or better.

I conducted regression analyses that parallel those presented in Table 5. However, the dependent variable now is a dichotomous measure. Each school is scored 1 if it is above the cutoff value, and 0 otherwise. As a result, it is appropriate to use logistic regression analysis rather than ordinary least squares regression. Instead of presenting R^2 as measures of explanatory power of these equations, I switch to the proportion reduction in chi-squared (I used L^2, or the log-likelihood measure of chi-squared as my indicator.) These results are presented in Table 5.

The substantive result is the same here as was evident in previous analyses: once the percentage of students receiving degrees in engineering and the percentage of students enrolled part time are controlled, the relationship between sex composition and elite status is severely attenuated and fails the conventional test of statistical significance. This finding is robust for the three cutoff values employed.

Engineering and education are among the few programs that significantly alter the distribution of men and women across schools in terms of selectivity. They serve to segregate men and women within schools and also inhibit women's ability to attend and graduate from competitive institutions. The fact that engineering works to segregate men and women both within and between schools highlights the usefulness of examining both of these aspects of gender differentiation.

Time Trends in School Status

These results made me curious regarding trends in women's representation in elite schools. Was the difference from Hearn (1990) and Persell et al. (1992) due to women's growing representation in colleges and universities and a growing acceptance of women's elite status? After all, Yale, Princeton, Dartmouth, and other elite schools remained exclu-

TABLE 5
Logistic Regression Analysis of Sex Gap in Elite College Degrees

	Dependent Variable: SAT 1200+		
Predictors	Model 1	Model 2	Model 3
Intercept	0.11 (0.38)	−0.38 (0.93)	−0.31 (0.79)
Percent female	−0.06*** (0.01)	−0.05*** (0.01)	−0.017 (0.014)
Percent engineering		0.01 (0.01)	0.04*** (0.01)
Percent part time			−0.29*** (0.05)
% Reduction in L^2	0.11	0.11	0.35

	Dependent Variable: SAT 1100+		
Predictors	Model 1	Model 2	Model 3
Intercept	−0.79*** (0.33)	0.14*** (0.42)	−0.006 (0.52)
Percent female	−0.05*** (0.01)	−0.04*** (0.01)	−0.013 (0.009)
Percent engineering		0.02* (0.01)	0.03*** (0.01)
Percent part time			−0.13*** (0.02)
% Reduction in L^2	0.08	0.08	0.22

	Dependent Variable: SAT 1000+		
Predictors	Model 1	Model 2	Model 3
Intercept	1.61*** (0.29)	0.83*** (0.35)	0.70*** (0.38)
Percent female	−0.03*** (0.01)	−0.03*** (0.01)	−0.012 (0.006)
Percent engineering		0.03*** (0.01)	0.04*** (0.01)
Percent part time			−0.07*** (0.01)
% Reduction in L^2	0.06	0.07	0.16

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

sively male until the late 1960s. Perhaps some trace of this legacy remained in 1980 and was captured by these earlier analysts. In other words, I sought to determine whether the difference in results was due to changes in opportunities for women over time, or whether it could be attributed to different methodologies.

In Table 6, I present the school average SAT score for women and men for three years: 1970, 1980, and 1993. I also present the percentage of students in elite schools, with three different cutoff values used to de-

TABLE 6
Sex Differences in SAT Scores, 1970, 1980, and 1993

	1970		1980		1993	
	Women	Men	Women	Men	Women	Men
Mean school SAT (*SD*)	960.9 (137.4)	981.9 (149.3)	974.1 (150.2)	988.2 (143.9)	961.3 (148.9)	979.4 (154.9)
Percent in schools with mean SAT over:						
1200	4.1	7.6	5.5	7.7	4.5	7.0
1100	14.4	18.5	16.4	18.9	14.0	17.4
1000	35.6	43.1	40.0	45.0	37.8	43.3

fine elite status. I applied 1991 SAT scores to all the years examined. This analysis thus holds the standing of schools in terms of the SAT scores constant and only considers the shifts of men and women across these institutions.[10]

The results indicate that between 1970 and 1980 women did indeed narrow the gap in representation in the elite schools. When elite schools are defined as those with average combined student SAT scores of 1200, the percentage of men in elite schools was more than twice that of women in 1970 and narrowed to a 2.6% differential by 1980. However, between 1980 and 1993 the gender differential did not narrow further but actually grew slightly. Consequently, the differences between my results and those reached by Hearn (1990) and Persell et al. (1992) are not due to changes in women's opportunities in the period 1980 to 1993 but are due to differences in the data examined and the methods employed.

This conclusion is further supported by the analysis presented in Table 7. Here, I extend the logistic regression analysis to 1970 and 1980. The results indicate that even in 1970, engineering and part-time status were the principal factors accounting for women's underrepresentation in elite schools. In 1970 and 1980 the percentage female had a slight positive effect on the average SAT score of a school, net of other factors. For all three periods—1970, 1980, and 1993—engineering and part-time enrollment account for the gender differential in degree attainment in elite schools. In other words, the effect of the percentage female is not statistically significant once these factors are controlled.[11]

Conclusions

The results presented here partly confirm those reported by Hearn (1991) and Persell et al. (1992). The data indicate that women do indeed graduate from colleges and universities with lower school standings than

TABLE 7
Logistic Regression Analysis of Sex Gap SAT Scores, 1970, 1980, and 1993

	Dependent Variable: Average SAT		
Predictors	1970	1980	1993
Intercept	988.34*** (8.85)	966.70*** (11.59)	988.58*** (17.73)
Percent female	0.32* (0.16)	0.52* (0.20)	-0.23 (0.29)
Percent engineering	2.53*** (0.31)	2.59*** (0.31)	2.98*** (0.40)
Percent part time	-3.54*** (0.23)	-3.21 (0.21)	-2.77*** (0.22)
R^2	0.23	0.22	0.18
	Dependent Variable: SAT 1100+		
Predictors	1970	1980	1993
Intercept	-0.32 (0.27)	-0.79*** (0.37)	-0.31 (0.79)
Percent female	-0.003 (0.005)	0.003 (0.007)	-0.017 (0.014)
Percent engineering	0.03*** (0.01)	0.04*** (0.01)	0.04*** (0.01)
Percent part time	-0.15*** (0.02)	-0.13*** (0.02)	-0.29*** (0.05)
% Reduction in L^2	0.24	0.22	0.35

do their male counterparts. These differences are modest in size but are consistent across a wide range of measures, including lower SAT scores and other indicators of school ranking. These differences narrowed during the 1970s but have remained quite constant since 1980.

The findings reported here, however, modify the conclusions offered by Hearn (1991) and Persell and her colleagues (1992) by identifying institutional sources of these differentials. The concentration of male-dominated engineering programs at selective institutions is one major reason for the gender gap in school standing. A second important factor is the concentration of part-time students, who are mostly women older than traditional-age college students, in below-average institutions. The combination of these factors explains the entirety of the gender gap in every measure of school standing employed in this study.

This study points to programs such as education and engineering that are differentially located across institutions that are skewed in their gender composition and that contribute to the gender differential in college standing. This finding raises a series of questions, namely why engineering programs are located at more selective institutions and why education programs are located at less selective schools. Jencks and Reisman (1968) survey the development of institutions of higher education and note the very different origins of professional instruction in education and engineering. Undergraduate education programs evolved out of normal schools and later became state colleges and sometimes universities. Schools devoted to producing teachers thus started out at the lowest rungs of tertiary education and only gradually achieved a degree of acceptance and respectability. Elite private institutions shunned teacher instruction, only sometimes to add graduate-level programs in education. In contrast, engineering schools began as part of the large land-grant institutions and were associated with elite universities dating back to the nineteenth century. Engineering was relatively well-funded and was linked intellectually to the physical sciences. The difference in status between engineering and education programs, then, has a long history, dating back to the early evolution of higher education in the United States.

But is gender itself partly responsible for these different institutional linkages? In other words, was it easier for engineering to connect with high-status institutions because its faculty and students were predominantly male? Engineering was easier to assimilate in high-status schools because of its close links to the physical sciences and because of the lucrative research support available. In contrast, education was seen as having less of a distinct intellectual basis and produced lower-status professionals (Jencks & Reisman, 1968). One could view elite institutions as interested in maintaining their status and not directly concerned with gender per se. Nonetheless, recent studies suggest that the status of the education profession and its location in institutions of higher education cannot be separated from the gender of its students and practitioners (Preston, 1998; Herbst, 1989). This is a topic that deserves further attention.

A related issue is why these programs continue to be so imbalanced in their gender composition. In other words, why are fields like engineering so male-dominated and fields like education so female-dominated? On this question, much research has been conducted (Tang & Smith, 1996; McIlwee & Robinson, 1992; Brush, 1991). For about twenty years, from the mid-1960s through the mid-1980s, fields of study in higher education were growing increasingly integrated by gender, principally because women steadily entered fields that had previously been dominated by men. There was relatively little change in the sex-composition of female-dominated fields such as education. However, since about 1985 the momentum toward gender integration has stalled, and a plateau has been reached (Jacobs, 1995). For example, women increased their representation in engineering from less than 1% in 1970 to until they reached about 13.2% in 1985. This level has hardly increased since that time. Thus, the gender differential in college status due to the gender segregation of fields of study will likely continue in the immediate future.

Another contributing factor to the gender differential in college standing is women's overrepresentation among part-time students. This is also a topic that deserves much additional study. We know that women are more likely to return to college as adults than are men, and we know that these returning students are much more likely to be women (Jacobs & Stoner-Eby, 1998). But there is much more to be learned here. It would be useful to have a clear explanation for the gender differential in part-time enrollment. It would be helpful to know whether part-time enrollment for women is a constrained choice that channels them into lower-status schools, reduces their chances of completion, and produces more limited economic benefits from the college degree. On the other hand, it is also possible that part-time enrollment provides the opportunity for college enrollment on the part of women who would not otherwise have had the chance to attend college. Part-time enrollment may well contribute to women's overall advantage in college degree completion. Of course these alternatives may not be mutually exclusive—part-time enrollment could be helpful to some women while constraining to others.

These results indirectly bear on the issue of gender bias in SAT scores. An unexplained gender differential could be attributed to gender bias in SAT scores, yet the data indicate that the gender gap in the average school SAT score can be explained by the institutional factors cited above. This does not mean that the SAT scores are gender neutral. It does, however, suggest that whatever biases there are in SAT scores, they do not currently constitute an insurmountable obstacle in obtaining access to high-status institutions. Of course, if changes in SAT scores designed to improve their predictive validity were to raise women's scores relative to men's, then women's representation in elite institutions might well improve further.

We do not need to speculate on whether selective schools are attempting to cap the number of women enrolling, because the gender gap in college status was explained by other institutional factors. However, the data described here pertain to 1993 graduates, and more recently some private schools may be attempting to bolster men's enrollment when women's representation is perceived to be too high. Continued attention to this issue is in order.

These results also indirectly reflect on the issue of parental investments in daughters and sons. If there had been a significant unexplained gender differential in school standing, parents' unwillingness to offer financial support would have been a leading explanation. But there was no significant unexplained gender differential. Consequently, the results presented here do not offer support to the contention that parents are less willing to invest in their daughters compared with their sons. Further direct examination of the finances of undergraduates and the role that financial considerations play in their schooling decisions is warranted.

Discussion

A great deal of research assumes that gender is an ascriptive factor that plays a role similar to that of race, ethnicity, and social class background in restricting educational choices and limited educational outcomes (Davies & Guppy, 1997; Hearn, 1992). But gender differs fundamentally from these other factors in that the family origins of men and women are similar. Education has been one of the areas in society in which women have made the most progress. Yet important obstacles remain, including differences in fields of study, low financial returns to schooling, and limited success of women in obtaining faculty positions in many fields and in elite institutions, among others. However, we should not expect all areas to show gender differentials. One of the goals of gender research in education should be to explain how a wide range of subtle and not-so-subtle obstacles for women coexist with relatively high enrollment rates, high grades, and high graduation rates. Indeed, one of the goals of this article is to explain how women continue to trail men in the average standing of the school they attend despite women's continued advances in undergraduate graduation rates.

I expect the gender gap documented here to continue in the coming years because the underlying factors have shown little movement. There has been relatively little change in women's representation in engineering in recent years. Students beyond the traditional age of college students continue to grow as a fraction of undergraduate enrollment, and this group continues to be disproportionately female. Thus, women may well continue to trail men in the ranking of their colleges and universities despite their continued progress in garnering a growing majority of bachelor's degrees.

These findings extend our understanding of the gender segregation of college majors. The findings indicate that gender-typed majors are not simply part of the landscape within colleges but also help to shape the stratification of schools themselves. Thus, majors have both within-college and between-college effects.

A final implication of this study is in the area of research on the economic returns to college. Because the size of programs such as engineering and education are related to the average SAT score of institutions, studies that ignore college major will likely obtain biased estimates of the effect of college ranking on earnings.

Notes

[1]See Fishel and Pottker (1977) for a discussion of alternative versions of educational equity legislation under consideration when Title IX was enacted and the National Organization for Women (1977) for a discussion of inadequate implementation and enforcement.

[2]There are complex technical issues regarding the adequacy of controls for unmeasured characteristics, both of individuals and schools. For example, Behrman, Rosenzweig, and Taubman (1996) did not control for major, and consequently they may have imputed to school "quality" effects that were instead a result of the covariation between majors and school ranking discussed below. Nonetheless, my view is that preponderance of evidence supports the conclusion that college ranking does indeed influence student outcomes.

[3]HEGIS stands for the Higher Education Graduates Information System.

[4]CASPAR stands for the Computer Aided Science Policy Analysis and Research Database System. Prepared by the Quantum Research Corporation of Bethesda, MD, CASPAR makes HEGIS data available through an on-line computer server system.

[5]There are several definitions of two-year schools in the CASPAR data, based on "Institutional Class" or "Highest Degree Awarded," in addition to the Carnegie definition. These definitions vary substantially.

[6]I want to thank my colleague Kermit Daniel of the Wharton School of Management at the University of Pennsylvania, who generously provided me with these data.

[7]In addition to education and engineering, I examined the full set of 29 majors available with these data to determine the effect of the gender distribution of these majors on the status of schools. The inclusion of other majors does not substantively change the results presented here. That is because most other fields of study are either found at a broad spectrum of schools, are not highly gender typed, or are not concentrated in high-status or low-status institutions.

[8]The data include all degree recipients, and consequently the standard issue of generalizing from a sample to the population does not apply here. However, in the multivariate analyses I treat the data as a sample with 1500 cases and use conventional measures of statistical significance as one measure by which results can be judged to be substantively important.

[9]I examined the problem of missing data by substituting 1982 SAT data from the UCLA Higher Education Research Institute for the missing schools. For schools with available data in both years, the SAT measures had nearly identical means (931.6 vs. 933.4) and were very strongly correlated ($r = 0.88$). The substantive pattern of results presented in Table 4 do not change. Regression results are available from the author.

[10]The relative standing of schools is quite stable over time. For example, the correlation of SAT scores calculated 10 years apart is 0.93 (author's calculation, using SAT data from 1973 and 1982). I relied on the *U.S. News* data for one year for consistency and to minimize the problems of missing data.

[11]I replicated these results using 1973 SAT data for 1970 and 1982 data for 1982, and the results closely match those reported here. Regression results are available from the author.

References

Alexander K. L., Pallas, A. M., & Holupka, S. (1987). Consistency and change in educational stratification: Recent trends regarding social class background and college access. *Research in Social Stratification and Mobility, 6,* 161–185.

Becker, G. 1981. *A treatise on the family.* Cambridge, MA: Harvard University Press.

Behrman, J. R., Pollack, R. A., & Taubman, P. (1986). Do parents favor boys? *International Economic Review, 27*(1), 33–54.

Behrman, J. R., Rosenzweig, M. R., & Taubman, P. (1996). College choice and wages: Estimates using data on female twins. *Review of Economics and Statistics, 78*(4), 672–685.

Bourdieu, P., & Passeron, J.-C. (1977). *Reproduction in education, society, and culture.* London: Sage.

Brush, S. G., 1991. Women in science and engineering. *American Scientist, 79,* 505–419.

Chamberlain, M. K. (Ed). *Women in academe: Progress and prospects.* New York: Russell Sage Foundation.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94* (Supplement), S95–S120.

Cooperative Institutional Research Program. (1996). *The American freshman: National norms for 1996.* Los Angeles: Higher Education Research Institute (UCLA).

Daniel, K., Black, D., & Smith, J. (1997a). College quality and the wages of young men. Unpublished manuscript, Department of Management, Wharton School, University of Pennsylvania.

Daniel, K., Black, D., & Smith, J. (1997b). College characteristics and the wages of young women. Unpublished manuscript, Department of Management, Wharton School, University of Pennsylvania.

Davies, S., & Guppy, N. (1997). Fields of study, college selectivity, and student inequalities in higher education. *Social Forces, 75,* 1417–1438.

Fishel, A., & Pottker, J. (1977). *National politics and sex discrimination in education.* Lexington, MA: D. C. Heath, 1977.

Gose, B. (1997, June 6) Liberal-Arts colleges ask: Where have the men gone? *Chronicle of Higher Education,* p. A35.

Hearn, J. C. (1990). Pathways to attendance at the elite colleges. In P. W. Kingston & L. S. Lewis (Eds.), *The high-status track: Studies of elite schools and stratification (pp. 121–146).* Albany, NY: State University of New York Press.

Hearn, J. C. (1991). Academic and nonacademic influences on the college destinations of 1980 high-school graduates. *Sociology of Education, 64,* 158–171.

Hearn, J. C. (1992). Emerging variations in postsecondary attendance patterns: An investigation of part-time, delayed and nondegree enrollment. *Research in Higher Education, 33*(6), 657–687.

Herbst, J. (1989). *And sadly teach: Teacher education and professionalization in American culture.* Madison: University of Wisconsin Press.

Ishida, H., Spilerman, S., & Su, K.-H. (1997). Educational credentials and promotion chances in Japanese and American organizations. *American Sociological Review, 62,* 866–882.

Jacobs, J. A. (1985). Sex segregation in American higher education. In L. Larwood, A. H. Stromberg, & B. Gutek (Eds.), *Women and work: An annual review* (pp. 191–214). Beverly Hills, CA: Sage.

Jacobs, J. A. (1995). Gender and academic specialties: Trends among college degree recipients during the 1980s. *Sociology of Education, 68*(2), 81–98.

Jacobs, J. A. (1996a). Gender inequality and higher education. *Annual Review of Sociology, 22,* 153–185.

Jacobs, J. A. (1996b). *Gender and race segregation between and within colleges.* Report for the Mellon Foundation.

Jacobs, J. A., & Kao, G. (1998, March). *Who worries most about paying back student loans?* Paper presented at the Eastern Sociological Society meetings, Philadelphia.

Jacobs, J. A., & Seliktar, M. (1998). *Gender, SAT scores, and mathematics performance in college.* Unpublished manuscript, Department of Sociology, University of Pennsylvania.

Jacobs, J. A., & Stoner-Eby, S.. (1998, September). Adult enrollment in higher education and cumulative educational attainment, 1970–1990. *Annals of the American Academy of Political and Social Science, 559,* 91–108.

James, E., Alsalam, N., Conaty, J. C. & To, D.-L. (1989). College quality and future earnings : Where should you send your child to college? *American Economic Review, 79,* 247–252.

Jencks, C. S., & Riesman, D. (1968). *The academic revolution.* Chicago: University of Chicago Press.

Karen, D. (1991). The politics of class, race, and gender: Access to higher education in the United States, 1960–1986. *American Journal of Education, 99,* 208–237.

Kelly, G. P. (1989). *International handbook of women's education.* New York: Greenwood Press.

Kelly, G. P., & Slaughter, S. (Eds.). (1991). *Women's higher education in comparative perspective.* Dordrecht, The Netherlands: Kluwer Academic Publishers.

King, E. M., & Hill, M. A. (1993). *Women's education in developing countries: Barriers, benefits, and policies.* Baltimore, MD: The Johns Hopkins University Press. Published for the World Bank.

Kingston, P. W., & Lewis, L. S. (Eds.). (1990). *The high status track.* Albany, NY: State University of New York Press.

Kingston, P. W., & Smart, J. C. (1990). The economic pay-off of prestigious colleges. In P. W. Kingston & L. S. Lewis (Eds.), *The high status track* (pp. 147–174). Albany, NY: State University of New York Press.

Lee, S. W., & Brinton, M. C. (1996). Elite education and social capital: The case of South Korea. *Sociology of Education, 69,* 177–192.

McIlwee, J. S., & Robinson, J. G. (1992). *Women in engineering: Gender, power, and workplace culture.* Albany, NY: State University of New York Press.

Mare, R. (1995). Changes in educational attainment and school enrollment. In R. Farley (Ed.), *State of the union: America in the 1990s* (pp. 155–214). New York: Russell Sage Foundation.

National Organization for Women. Project on Equal Education Rights (PEER). (1977). *Stalled at the start: Government action on sex bias in the schools.* Washington, D C: NOW Legal Defense and Education Fund.

Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students.* San Francisco: Jossey Bass.

Persell, C. H., Catsambis, S., & Cookson, P. W. (1992). Differential asset conversion: Class and gendered pathways to selective colleges. *Sociology of Education, 65,* 208–225.

Preston, J. A. (1998, April). *Gender and professionalization: An investigation of changes in teacher education in nineteenth-century New England.* Paper presented at the annual meeting of the American Educational Research Association Conference, San Diego, CA.

Schwager, S. (1987). Educating women in America. *Signs, 12,* 333–372.

Solomon, B. M. (1985). *In the company of educated women: A history of women and higher education in America.* New Haven: Yale University Press.

Steelman, L. C., & Powell, B. (1991). Sponsoring the next generation: Parental willingness to pay for higher education. *American Journal of Sociology, 96*(6), 1505–1529.

Steelman, L. C., & Powell, B. (1989). Acquiring capital for college: The constraints of family configuration. *American Sociological Review, 54,* 844–855.

Tang, J., & Smith, E. (Eds.). *Women and minorities in American professions.* Albany, NY: State University of New York Press.

U.S. Department of Education. National Center for Educational Statistics. (1996). *Digest of educational statistics.* Washington, DC: U.S. Government Printing Office.

Useem, M., & Karabel, J. (1990). Pathways to top corporate management. In P. W. Kingston & L. S. Lewis (Eds.), *The high status track* (pp. 175–219). Albany, NY: State University of New York Press.

Wainer, H., & Steinberg, L. S. (1992). Sex differences in performance on the mathematics section of the scholastic aptitude test: A bidirectional validity study. *Harvard Educational Review, 62,* 323–336.

Willingham, W. W., & Cole, N. S. (1997). *Gender and fair assessment.* Princeton, NJ: Educational Testing Service.