Gender Gaps in High School Dropout Rates and College Attendance Rates in Massachusetts and Its Large Cities: The Educational Deficits of Boys and Their Future Economic and Social Consequences

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Introduction

The increasingly important role of formal education in influencing a highly diverse set of economic, labor market, civic and social outcomes for individuals, families, communities, and states has been well documented.[1] Here, in Massachusetts, the changing industrial and occupational structure of jobs in the state's labor markets has made the acquisition of a strong base of literacy/numeracy proficiencies and some post-secondary schooling essential to personal economic success, especially in providing access to jobs paying good wages.[2] A recent skills summit in Boston hosted by the Massachusetts Institute for A New Commonwealth highlighted the need for a more comprehensive, statewide set of educational and job training programs to address future skill imbalances.[3]

Success in preparing our next generation of adults for the future labor market in Massachusetts will be critically influenced by the ability and willingness of youth to acquire a solid base of reading/math skills in elementary, junior high, and high school, to graduate from high school, and to attend a post-secondary education or training program upon graduating from high school. During the past six months, the Massachusetts Department of Education has issued two reports documenting key educational outcomes for recent public high school students. In November 2001, the annual report on dropout rates among high school students in Massachusetts public schools was released.[4] In March 2002, the Massachusetts Department of Education

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[1] For a review of educational attainment's links to a wide array of labor market outcomes for young and older adults in the U.S. and OECD countries over the past two decades,
See: (i) Organization for Economic Co-operation and Development, The Well-Being of Nations: The Role of Human and Social Capital, Paris, 2001; (ii) Andrew Sum, Neeta Fogg, and Garth Mangum, Confronting the Youth Demographic Challenge: The Labor Market Prospects of Out-of-School Young Adults, Sar Levitan Center for Social Policy Studies, Johns Hopkins University, Baltimore, 2000.

[2] See: Andrew Sum, Mykhaylo Trub'skyy, Neeta Fogg, Sheila Palma, The Annual Earnings of Workers in Massachusetts and the U.S.: Trends Over the 1979-2000 Period, Report Prepared for the Massachusetts Institute for a New Commonwealth, Boston, December 2001.

[3] See: (i) Diane Lewis, "Skills Gap Called Drag on Economy," *The Boston Globe*, March 2, 2002, pp. C1-C2; (ii) Andrew Sum and Ishwar Khatiwada, Joseph McLaughlin, Jacqui Motroni, Mykhaylo Trub'skyy, and Sheila Palma, High School Dropout Problems in the City of Boston and Massachusetts: Recent Trends in Dropout Rates, Gender/Race Differences in Dropout Rates, and the Economic and Social Consequences of Dropping Out of High School, Center for Labor Market Studies, Northeastern University, Boston, Massachusetts, March 2002; (iii) Ishwar Khatiwada, Andrew Sum, Jennifer Power with Jacqui Motroni, Gender Differences in High School Graduation Rates and the College Enrollment Rates of Graduates from Boston Public High Schools in Recent Years, Prepared for the Boston Private Industry Council, Boston, February 2002.

[4] For findings on the survey of high school dropouts during the 1999-2000 school year,
See: Massachusetts Department of Education, Dropout Rates in Massachusetts Public Schools: 1999-2000, Malden, November 2001.

published its report on the college enrollment plans of high school graduates from the Class of 2000.[5]

Despite their importance, the public releases of these two important studies were only lightly covered by the print and TV media. The findings on educational progress in these two areas were somewhat mixed. The 1999-2000 annual dropout rate for all public high school students in Massachusetts was estimated to be 3.5%, essentially identical to the average for the preceding three school years. High school dropout rates continued to vary widely by race-ethnic group, ranging from a low of 2.6% for White, non-Hispanics to a high of 8.2% for Hispanics, the fastest growing segment of the state's public high school student body.[6] The findings from the survey of the college plans of graduates from the Class of 2000 were more favorable. Nearly 77 percent of the respondents to the survey reported that they planned to attend some type of post-secondary educational program in the fall immediately following graduation, up from 74 percent in 1995 and only 69 percent in 1990. Few school systems, however, other than the city of Boston track the actual work and college experiences of their graduates.

A more careful and disaggregated analysis of the data from these two surveys reveals a number of important findings on gender differences in school dropout rates and college going plans and between the educational outcomes for males in the state's larger and less affluent cities and their counterparts in the affluent suburbs. This research paper is intended to identify and assess the implications of these gender and geographic differences in key educational outcomes. We will begin by analyzing trends over time in the annual and projected four-year dropout rates for men and women in Massachusetts since the mid-1990s. This will be followed by a similar analysis of gender differences in dropout rates for selected cities and towns across the Commonwealth for the most recent school year (1999-2000). The dropout rate analysis will be followed by an examination of key findings on college enrollment plans for female and male graduates from the Class of 2000 for the state and for selected cities and towns. Findings from the dropout and college plan surveys will be combined to estimate the share of male and female high school students in Massachusetts who will both graduate from high school and plan to

[5] Massachusetts Department of Education, Plans of High School Graduates: Class of 2000, Malden, March 2002.
[6] During the 1999-2000 school year, there were 23,507 Hispanic public high school students in the state, representing nearly 1 of every 10 students and exceeding the number of African American students by 1,200. Between the 1995 and 2000 school years, the total number of public school students increased by 13% while the number of Hispanic students increased by 23%.

enroll in college after graduation. The size of the gender gaps in these college enrollment ratios will be presented for the state and for our selected set of cities and towns.

The findings on the recent dropout and college attendance behavior of men and women in Massachusetts will be supplemented with national findings on gender differences in college enrollment rates for recent high school graduates and on recent trends in the numbers of associate, bachelor, and masters degrees awarded to men and women in the U.S. The potential economic and social consequences of these growing gender differences in educational outcomes will be highlighted in the concluding section of this paper.

Annual and Four Year Projected High School Dropout Rates for the State of Massachusetts and Selected Cities and Towns

Each year, the Massachusetts Department of Education conducts a statewide survey of dropouts from the state's public high schools. The findings of this survey are used to generate estimates of annual dropout rates and projected four-year dropout rates for the entire state, gender and race-ethnic groups of students, school districts, and individual high schools.[7] In conducting these surveys, the Massachusetts Department of Education uses a definition of school dropouts that was originally developed by the U.S. Department of Education. A high school dropout "is defined as a student in grade nine through twelve who leaves school prior to graduation for reasons other than a transfer to another school and does not re-enroll before the following October 1."[8]

Estimates of annual dropout rates from Massachusetts public high schools for the 1994-95 through 1999-2000 school years are displayed in Table 1. Findings are presented for all high school students and for men and women separately. The reporting period for the 1999-2000 school year covers the July 1, 1999 to June 30, 2000 period, but the state allows dropouts from this time period to return to school by October 1, 2000. The annual dropout rate for all Massachusetts public school students was 3.6% in the 1998-99 school year and 3.5% in the

[7] See: (i) Massachusetts Department of Education, Dropout Rates in Massachusetts Public Schools: 1998-1999, Malden, August 2000; (ii) Massachusetts Department of Education, Dropout Rates in Massachusetts Public Schools: 1999-2000, Malden, November 2001.

[8] It should be noted that this definition of a school dropout will exclude those students who dropped out of school prior to entering the ninth grade.
See: Massachusetts Department of Education, Dropout Rates in Massachusetts Public Schools: 1999-2000.

1999-2000 school year. The statewide annual dropout rate has varied within a narrow range (3.4 to 3.6 percent) over the past six years.

Table 1:
Annual Dropout Rates for Public High School Students in Massachusetts,
Total and by Gender, 1994-95 to 1999-2000 School Years
(Numbers in Percent)

School Year	(A) All	(B) Men	(C) Women	(D) Men/Women
1994-95	3.5	4.1	3.0	137
1995-96	3.4	3.9	2.9	134
1996-97	3.4	3.9	3.0	130
1997-98	3.4	3.9	2.9	134
1998-99	3.6	4.0	3.1	129
1999-2000	3.5	4.0	2.9	137

Source: Massachusetts Department of Education, selected publications.

For each of the past six years, the annual dropout rate for male public high school students has exceeded that of women by approximately 1 percentage point, with an average dropout rate of just under 4.0 percent for men versus 3.0 percent for women. In relative terms, the annual dropout rates of men exceeded those of women by 30 to 37 percent over the past six years. (Table 1).

In addition to producing estimates of annual dropout rates from the state's public high schools, the Massachusetts Department of Education also calculates estimates of "projected four-year dropout rates" for current and future graduating classes. The formula used to generate these projected four-year dropout rates relies on annual dropout rates of students in each grade nine through twelve.[9] Estimates are provided for the state as a whole, for gender and race-ethnic groups, and for individual school districts. Estimates of these projected four-year dropout rates for the state and for men and women separately are displayed in Table 2. For the Class of 2000, the dropout rate for all high school students was 13 percent, which was identical to that for the Class of 1999 and the projected dropout rates for the next three graduating classes. A dropout rate of 13 percent implies that 13 of every 100 public high school students who start the ninth

[9] The precise mathematical formula used by the Department of Education to generate these projected four-year dropout rates can be found in the following publication. The methodology assumes that the dropout rates for each high school class (grades 9 through 12) will stay the same over the next three school years.
See: Massachusetts Department of Education, Dropout Rates in Massachusetts Public Schools: 1999-2000, p. 9.

grade will leave high school before they receive a diploma. Some of these dropouts will return to school later in their adult lives or earn a GED certificate.

Table 2:
Projected Four-Year Dropout Rates for Public High School Students in Massachusetts, Total and by Gender, Classes of 1999 to 2003

School Year	(A) All	(B) Men	(C) Women	(D) Men/Women
Class of 1999	13	15	11	136
Class of 2000	13	15	11	136
Class of 2001	13	15	11	136
Class of 2002	14	15	12	125
Class of 2003	13	15	11	136

Source: Massachusetts Department of Education, selected publications.

The projected four year dropout rates for men from each of these five graduating classes was 15% versus a dropout rate of only 11 percent for women. Thus, 15 of every 100 male public high school students who start the ninth grade will leave school before graduating, a dropout rate that is 36 percent higher than that of women throughout the state.

Estimated four-year dropout rates for the class of 2000 for 11 large central and inner cities and six affluent suburbs are presented in Table 3. Findings are presented for men and women separately. For these 11 large and typically less affluent cities, projected four year dropout rates for men ranged from 19 percent (Gardner) to high of 41 to 42 percent in Lawrence and Lowell.[10] The unweighted average male dropout rate for these 11 cities was 31 percent. In 10 of these 11 cities, the male dropout rate exceeded that for women, with the male-female dropout gap being equal to 8 to 12 percentage points in 7 of these 11 cities, including Boston, Brockton, Chelsea, Fall River, and New Bedford.[11]

In substantial contrast to the situation in these large cities, the projected four year dropout rate for men and women in our six affluent suburban school districts averaged only one percent

[10] The 37 and 28 percent four year cumulative dropout rates for men and women, respectively, for the city of Boston are substantially different from those generated by a Manhattan Institute researcher using a quite different methodology that appears to have a number of substantive flaws for use in estimating dropout rates for the city of Boston. See: Jay P. Greene, High School Graduation Rates in the United States, The Manhattan Institute, New York City, November 2001.

[11] Only in the city of Springfield did the four year dropout rate for men not exceed that for women. The projected four year dropout rate for both groups was 22% for the class of 2000.

for both men and women.[12] There was no overall gender gap in school dropout rates in these affluent school districts.

A comparison of the projected four year dropout rates for men in the 11 large cities with those in the six affluent suburban cities and towns reveals an extraordinarily stark difference in dropout rates. Nearly one-third of the men in the public high schools in these 11 central and inner cities were estimated to have dropped out of high school before receiving a high school diploma versus only one percent of the young men in the six affluent suburbs. The gap between the four year dropout rates of men in these two sets of cities and towns was 30 percentage points. Among women in these same two sets of cities and towns, there also was a large gap in dropout rates, but the gap was only 22 to 23 percentage points for women. Young men in the state's largest and less affluent cities faced the greatest risk of leaving high school without a diploma and were characterized by a dropout rate 31 times as high as that for their male peers in the state's more affluent suburban communities.

[12] The averages are unweighted mean percentages. Each school district was given an equal weight in calculating the average dropout rate.

Table 3:
Estimated Four Year Cumulative Dropout Rates of Men and Women in the State of Massachusetts and Selected Cities, Class of 2000

City/State	(A) Men	(B) Women	(C) Men - Women
State	15	11	+4
Boston	37	28	+9
Brockton	25	17	+8
Chelsea	36	28	+12
Fall River	30	20	+10
Gardner	19	8	+11
Lawrence	42	39	+3
Lowell	41	37	+4
New Bedford	36	25	+11
Pittsfield	26	18	+8
Springfield	22	22	0
Worcester	24	21	+3
Average, Above 11 Cities	31	24	+7
Brookline	2	1	+1
Harvard	0	2	-2
Lexington	0	1	-1
Medfield	0	0	0
Newton	4	1	+3
Weston	0	0	0
Average, Above Six Cities and Towns	1	1	0

College Enrollment Plans of High School Graduates

Each year, in the spring months prior to graduation, counseling staffs and teachers in the state's public high schools administer an exit survey to graduating high school seniors, requesting them to provide information on their future plans after graduation, including their education, employment, and military service plans.[13] The information provided by students is coded by the public schools who then send the data to the Massachusetts Department of Education for use in preparing a statewide report on the post-high school college plans of each

[13] For an example of the survey forms used in the city of Boston, see: Boston Public Schools, Class of 1999 Exit Survey, Boston, 1999. The Boston exit survey form until this year (class of 2002) did not allow students to check more than one category of responses, i.e. they could not check both employment and schooling despite the fact that followup surveys for the class of 1999 and 2000 revealed that more than half of all graduates attending college in the spring were simultaneously employed.

year's graduating class with breakouts of the results by school district. The Massachusetts Department of Education also graciously provided us with unpublished data on college plans by gender group by school district. For the graduates from the class of 2000, we estimated the fraction of graduates who planned to attend "college" by summing responses for the following three groups:

- Those planning to attend a two year college or university, whether public or private
- Those planning to attend a four year college or university, public or private
- Those planning to attend some other type of post-secondary education or training institution (cosmetology, secretarial school, computer training institute).[14]

Estimates of the share of all public high school graduates from the classes of 1990, 1995, and 2000 in Massachusetts who planned to attend college after graduation are displayed in Table 4. Among all public high school graduates from the class of 1990, 69% planned to attend "college" in the fall immediately following graduation. By 1995, this ratio had risen close to 74 percent, and, for the class of 2000, just under 77 percent of the respondents reported that they planned to enroll in some type of college or post-secondary training program. For each of these three graduating classes, women were more likely than men to report that they were planning to attend college, with the absolute size of the gaps being 12 percentage points in each of these three years. For example, among graduates from the class of 2000, nearly 83% of the women reported plans to attend college versus only 70% of the men. Nationally, female high school graduates also have been more likely to attend college in the fall immediately following graduation than their male counterparts throughout the entire 1990's.[15]

[14] Of the near 77% of graduates statewide who planned to attend college upon graduation, only 2 to 3 percent cited enrollment in an "other" postsecondary educational or training institution.

[15] See: Andrew Sum, Neeta Fogg, and Garth Mangum, Confronting the Youth Demographic Challenge: The Labor Market Prospects of Out-of-School Young Adults, Sar Levitan Center for Social Policy Studies, Johns Hopkins University, Baltimore, 2000.

Table 4:
Percent of Massachusetts Public School Graduates from the Classes of 1990, 1995, and 2000 Who Planned to Attend College Upon Graduation, Total and by Gender

Class	(A) All	(B) Men	(C) Women	(D) Women - Men
1990	69.2	63.0	75.3	+12.3
1995	73.7	67.6	79.6	+12.0
2000	76.7	70.4	82.7	+12.3

Source: Massachusetts Department of Education, selected years.

The findings on college enrollment plans for male and female graduates from the class of 2000 from the state's 11 large cities and the six affluent suburban school districts are presented in Table 5.[16] For male graduates from the 11 large cities, approximately 69% (unweighted average) planned to attend a post-secondary educational or training institution, with these ratios ranging from 59% to 78% in these 11 cities. Female graduates from each of these 11 large cities were more likely than men to report plans to attend college. The unweighted average share of women with college plans was slightly over 81 percent, or 12.3 percentage points high than that of men. The size of these gender gaps in college enrollment plans varied from 4 to 19 percentage points in these 11 large and less affluent cities.

In five of the six affluent suburban school districts, women also were somewhat more likely than men to report plans to attend college, but the gender gap was slightly under four percentage points, and 91% to 95% of both groups planned to attend college upon graduation. Male graduates from the affluent suburban school districts were considerably more likely than their male counterparts in the large cities to plan to attend college immediately after graduation (91% vs. 69%). The character of the college plans of these male graduates from the large cities and affluent suburbs also differed substantially. Male graduates from the affluent suburbs were two and one-half times as likely as male graduates from the large cities to plan on attending four year colleges and universities (84% vs. 34%). This finding has a number of important implications for college outcomes. Persistence and completion rates in college tend to be

[16] For the city of Boston, we substituted our own analysis of the Exit Surveys for the class of 2000 for those provided by the state. The state's surveys reported that such information was missing for nearly 20 percent of the graduates from Boston public high schools.

considerably higher for those attending four year colleges than for those beginning at two year institutions.[17]

Table 5:
Percent of Male and Female Graduates Who Planned to Attend a Post-Secondary Educational Program Upon Graduation, Selected Cities and Towns, Class of 2000

City	(A) Men	(B) Women	(C) Women – Men
Boston	58.7	66.6	+7.9
Brockton	77.8	86.6	+8.8
Chelsea	64.6	79.5	+14.9
Fall River	63.8	79.1	+15.3
Gardner	78.4	89.0	+10.6
Lawrence	68.1	87.1	+19.0
Lowell	76.3	83.6	+7.3
New Bedford	73.8	77.9	+4.1
Pittsfield	67.0	86.4	+19.4
Springfield	67.5	79.2	+11.7
Worcester	63.5	78.5	+15.0
Average, Above 11 Cities	68.9	81.2	+12.3
Brookline	84.4	86.9	+2.5
Harvard	92.7	97.0	+4.3
Lexington	94.4	97.7	+3.3
Medfield	96.5	93.5	-3.0
Newton	83.8	92.7	+8.9
Weston	92.7	100.0	+7.3
Average, Above Six Cities and Towns	90.8	94.6	+3.8

Combining the Findings on School Dropout Rates and College Enrollment Plans

The above findings on high school dropout rates and college plans of high school graduates can be combined to generate estimates of the fraction of high school students from a particular class that will both graduate from high school and plan to attend college immediately following graduation.[18] Estimates of the shares of male and female students from the class of

[17] National longitudinal evidence for beginning postsecondary students during the 1989-90 school year revealed that 76% of those who began at four year institutions were still enrolled or had attained a degree at the end of five years versus only 52% of those starting at two year schools. See: Paula Knepper, The Educational Persistence and Attainment of 1989-90 Beginning Postsecondary Students After Five Years, National Center for Education Statistics, Washington, D.C., 1997.

[18] These estimates are derived in the following manner. Statewide, 85% of male, high school students were estimated to have graduated with the class of 2000. Of these male graduates, 70% planned to attend some type of

2000 who both graduated from high school and planned to attend college in the Fall of 2000 are displayed in Table 6 for the entire state, for the 11 large central and inner cities and for the six affluent suburban communities. Statewide, 60 percent of males would both graduate from high school and plan to attend college upon graduation. In comparison, 74 percent of the women from the class of 2000 would do so, a 14 percentage point gap in favor of women (see Table 6 and Chart 2).

Table 6:
Percent of Men and Women Who Both Graduated From High School and Planned to Attend a Post-Secondary Educational Program Upon Graduation, Class of 2000

City/State	(A) Men	(B) Women	(C) Men - Women
State	60	74	-14
Boston	37	48	-11
Brockton	58	72	-14
Chelsea	41	57	-16
Fall River	45	63	-18
Gardner	64	82	-18
Lawrence	39	53	-14
Lowell	45	53	-8
New Bedford	47	58	-11
Pittsfield	50	71	-21
Springfield	53	62	-9
Worcester	48	62	-14
Average, Above 11 Cities	48	62	-14
Brookline	83	86	-3
Harvard	93	95	-2
Lexington	94	97	-3
Medfield	96	93	+3
Newton	80	92	-12
Weston	93	100	-7
Average, Above Six Cities and Towns	90	96	-6

Among men from the 11 large cities, only 48 percent would be expected to both graduate from high school and enroll in a post-secondary educational program in the fall of 2000, with these estimates for individual school districts ranging from 37 percent to 64 percent (Table 6 and

college. By multiplying these two ratios by each other, an estimated 60% of men would both graduate and plan to attend college.

Chart 1). In comparison 62 percent of the women from these eleven large urban districts both graduate from high school and plan to enroll in college upon graduation, a 14 percentage point advantage in favor of women. There was a smaller gender difference in this key educational outcome for public high school students from the six affluent suburban school districts: 96% of the women versus 90% of the men, a six percentage point difference.

Comparing the findings for men in the eleven large/inner cities with those of their peers in the six affluent suburbs reveals a number of very striking differences. While, on average, 90% of the men from these six affluent communities would both graduate from high school and plan to attend college, only 48% of the men from the eleven large central cities would do so, a near two to one difference. If one only considers those men who planned to attend a four year college or university upon graduation, the estimated shares of men who would both graduate from high school and enroll in a four year college or university would be 23% for men from the eleven large cities and nearly 84% for men from the affluent suburbs, a relative difference of nearly four times. Since college persistence rates vary considerably by the socioeconomic status of student's families and the type of educational institution they attend, ultimate differences in college degree attainment rates between men in the state's large city school districts and the affluent suburbs are likely to be even larger.[19] These large gender and geographic gaps in high school graduation and college enrollment rates need to be immediately addressed by the state's educational and economic policy makers. Long term economic prospects of young men from the state's central cities and those from its affluent suburbs are likely to differ dramatically, given these large gaps in educational outcomes.

[19] Knepper's analysis of persistence rates for the 1989-90 sample of beginning postsecondary students revealed that 73% of those from the highest quartile SES had attained some type of degree or were still enrolled four years later versus 60 percent of those in the middle two quartiles and only 47 percent of those in the bottom quartile. See: Paula Knepper, op. cit.

Chart 1:
Percent of Men Who Both Graduated From High School and Planned to Attend a Post-Secondary Educational Program Upon Graduation, Class of 2000

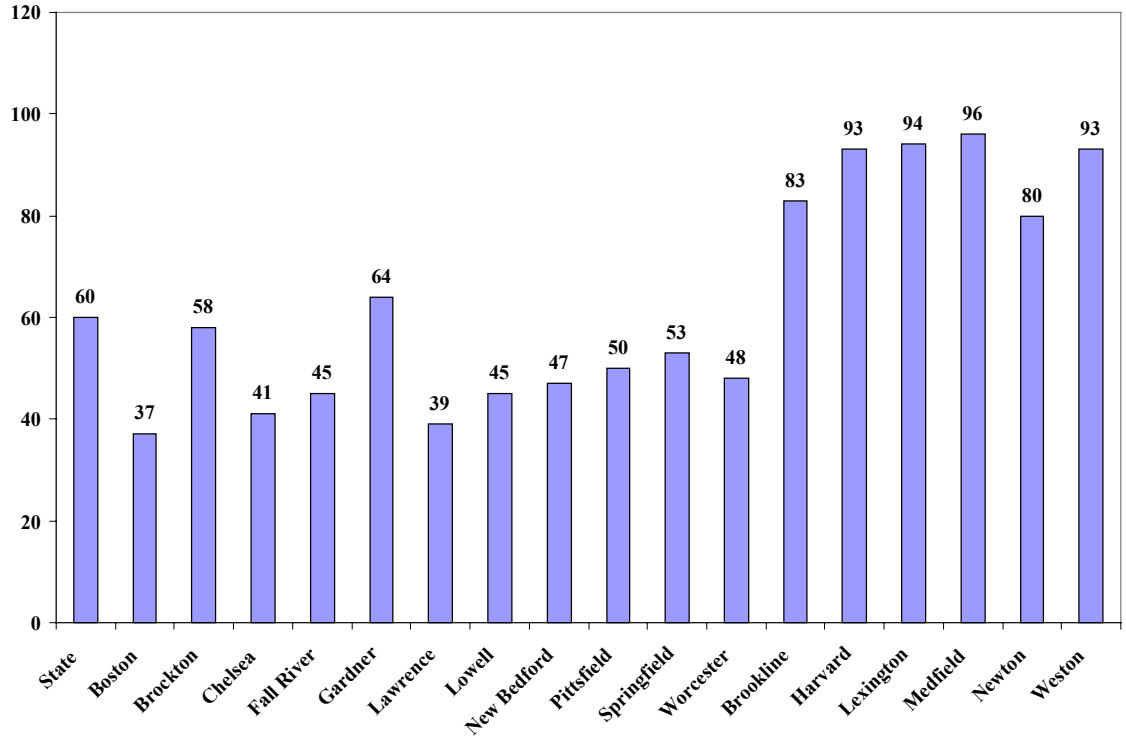
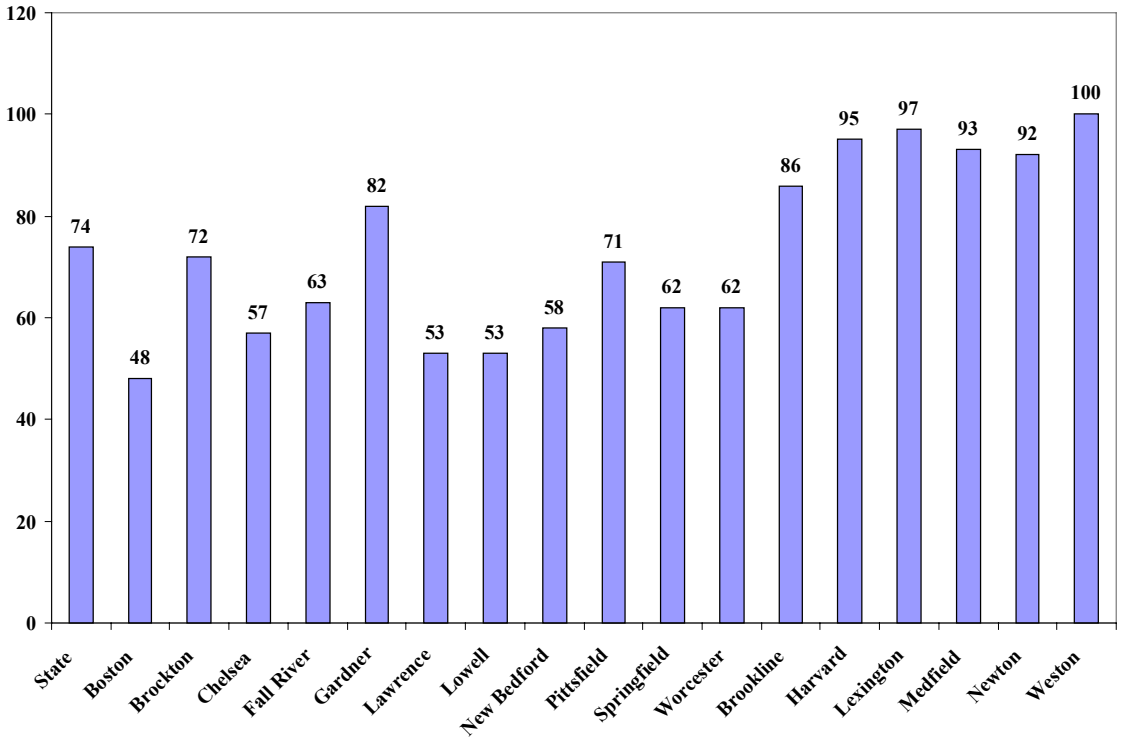


Chart 2:
Percent of Women Who Both Graduated From High School and Planned to Attend a Post-Secondary Educational Program Upon Graduation, Class of 2000



Gender Differences in College Enrollment and Degree Attainment at the National Level

Nationally, there have been growing gender gaps in college enrollment rates and degree attainment rates over the past two decades. Males across the country continue to drop out of high school at rates above those of women. After achieving parity with males in college enrollment rates among new high school graduates in the late 1970s, young women now attend college at rates four to seven percentage points higher than those of their young male high school graduate counterparts. For example, among graduates from the Classes of 1999 and 2000, 65% of women were enrolled in college in the fall immediately following graduation versus only 60% of the men. (Table 7). Among older adults (25 and older), women are more likely than men to be enrolled in some post-secondary educational program with the gaps increasing with age. In October 1999, among 25 to 34 year olds, there were 112 women for every 100 men enrolled in some type of post-secondary educational program. Among adults 35 and older, there were 165 women enrolled in college versus every 100 men.[20] When they do enter post-secondary educational institutions, women are more likely than men to persist in school through graduation and to obtain degrees and certificates.[21]

Table 7:
Trends in College Attendance Rates of New High School Graduates in the U.S. by Gender, Selected Years 1988-89 to 1999-2000
(in %)

	(A)	(B)	(C)
Graduating Classes[1]	Men	Women	Women – Men
1988 – 89	57.3	61.2	+3.9
1993 – 94	60.2	64.3	+4.1
1997 – 98	63.0	69.7	+6.7
1999 – 2000	60.6	65.3	+4.7

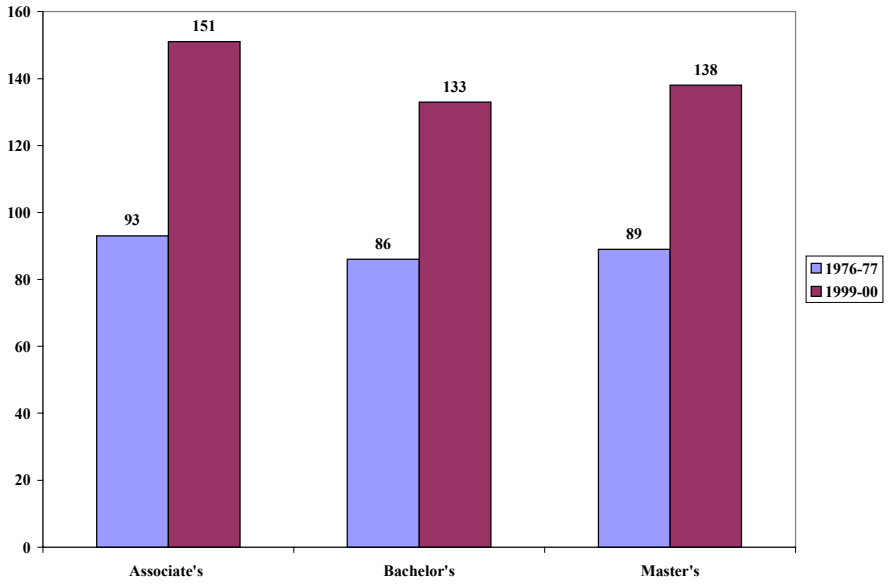
[1]Note: These estimates are two year averages.
Source: U.S. Bureau of Labor Statistics, October CPS survey supplements, tabulations by authors.

Over the past two decades, as a consequence of these growing gender differences in high school dropout rates, college attendance rates, and college degree attainment rates, women have

[20] See: U.S. Bureau of the Census, Current Population Reports, Population Characteristics, Series P20-533, School Enrollment in the U.S.: Social and Economic Characteristics of Students, Washington, D.C., March 2001.
[21] Paula Knepper, The Educational Persistence and Attainment of 1989-90 Beginning Post-Secondary Students After Five Years, National Center for Education Statistics, Washington, D.C., 1997.

obtained substantially more associate, bachelor, and master's degrees than men. For example in 1976-77, women received only 93 associate degrees for every 100 degrees received by men. By the end of the 1970s, women were receiving slightly more associate degrees than men, and the gender gaps have widened considerably since then. By the 1999-2000 school year, women were obtaining 151 associate degrees for every 100 received by men (Chart 3). Similar time trends prevailed among bachelor degree recipients, with women receiving only 86 bachelor degrees per 100 awarded to men in 1976-77, but obtaining 33 percent more degrees than men in the 1999-2000 school year. Women today also receive considerably more Masters degrees than men, reversing the male advantage that prevailed through the end of the 1970s. By the 1999-2000 school year, women received 138 Masters degrees per every 100 such degrees awarded to men. (Chart 3).

Chart 3:
The Number of Women Awarded Associate's, Bachelor's and Master's Degrees Per 100 Men, U.S.: 1976-77 and 1999-2000



The gender gaps in the number of college degrees awarded in recent years prevail among each race-ethnic group, including Whites, but are especially large among Blacks and American Indians. For example, during the 1999-2000 school year, the number of associate degrees awarded to White women exceeded the number awarded to White males by 49 percent; however, among Blacks and American Indians, the gaps were 88% and 92%, respectively. (See Chart 4). Among bachelor degree recipients, the number of degrees awarded to women relative to the number obtained by men ranged from 117 per 100 among Asians to 146 per 100 among

Hispanics to 192 per 100 among Blacks. (Chart 5). Similar-sized gender gap differences prevailed among Masters degree recipients in these race-ethnic groups. Only among Ph.D. recipients do men continue to outperform women, but, even here, gender gaps in degree attainment have narrowed over the past two decades. The educational competition in college degree attainment has clearly been dominated by women in the 1990s, and the National Center for Education Statistics projects a continuation of these trends over the current decade, with women increasing the size of their advantages over men among associate, bachelor, and master's degree recipients. (Chart 6).

Chart 4:
The Number of Women with Newly Awarded
Associate Degrees per 100 Men by Race/Ethnic Group, 1999-2000

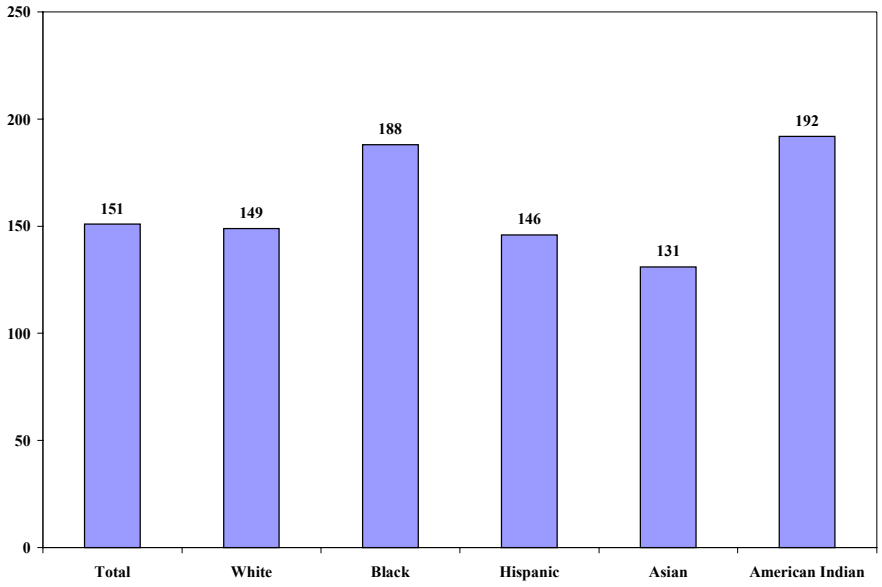


Chart 5:
The Number of Women With Newly Awarded
Bachelor's Degrees Per 100 Men by Race-Ethnic Group, 1999-2000

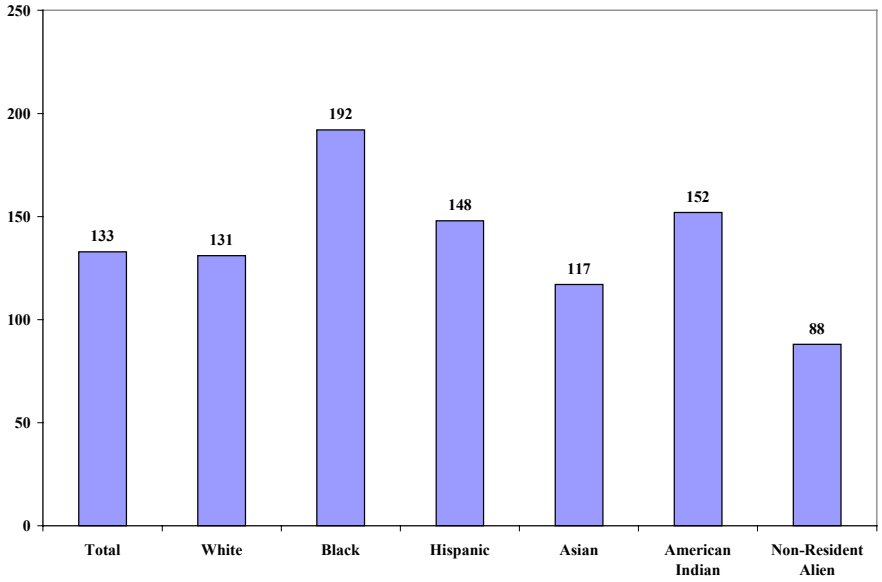
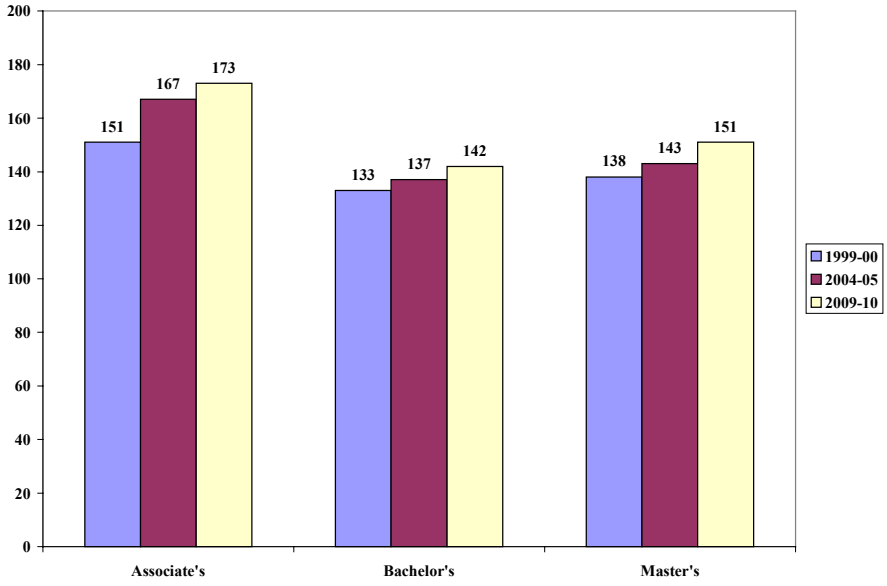


Chart 6:
Number of Women Awarded a Degree Per 100 Men,
U.S.: Actual in 1999-00, Projected for 2004-05 and 2009-10



The Economic and Social Consequences of Men's Inferior Educational Outcomes

The high dropout rates among many high school students, especially males, in the state's larger cities and their considerably lower planned incidence of college going does not bode well for their personal economic futures or the cities in which they reside. Adults without a high school diploma are less likely to seek work and they face higher unemployment and underemployment problems when they do enter the labor market. During the past few decades, state workers lacking a high school diploma or a GED have fared quite poorly in the changed labor market environment which places a strong premium on formal schooling and literacy/numeracy proficiencies.

Between 1979 and 1999, the median real annual earnings (in constant 2000 dollars) of year-round, full-time employed 20-64 year old high school dropouts declined by 24 percent in the U.S. and by 27 percent in Massachusetts.[22] In the U.S., even adults with a high school diploma experienced a 7 percent decline in their median annual earnings while Massachusetts adults with a similar level of schooling only improved their real annual earnings by 1% over the past two decades. By the year 2000 in our state, the median annual earnings of employed year-round, full-time high school graduates were 50% higher than those of high school dropouts while bachelor degree recipients earned 53% more than high school graduates and those workers with a Master's or higher degree earned three times as much as high school dropouts.

Families headed by high school dropouts in the U.S. and Massachusetts experienced declines in their median real incomes over the past 20 years, with the real income of the typical Massachusetts family with a head lacking a high school diploma declining by 21% over this time period.[23] In contrast to the deteriorating economic prospects of these families with limited formal schooling, the median incomes of Massachusetts families headed by an individual with a Masters or higher degree increased by nearly 30 percent. The family income gaps between the

[22] For a review of the earnings experiences of year-round, full-time workers in the U.S. and Massachusetts by educational attainment over the past two decades,
See: Andrew Sum, Mykhaylo Trub'skyy, Neeta Fogg, and Sheila Palma, The Annual Earnings of Workers in Massachusetts and the United States: An Assessment of Trends in the Level and Distribution of Earnings Over the 1979-2000 Period, Report Prepared for the State of the American Dream in Massachusetts Project, Massachusetts Institute for A New Commonwealth and Blue Cross/Blue Shield, Boston, December 2001.

[23] See: Neeta Fogg, Andrew Sum, Mykhaylo Turb'skyy and Sheila Palma, Trends in the Economic Well-Being of Households and Families in Massachusetts, 1979-2000, Report Prepared for the Massachusetts Institute for a New Commonwealth, Boston, January 2002.

educated haves and have nots widened considerably across the nation and the state over the past two decades.

The depressed annual earnings of poorly educated adults and their families in Massachusetts combined with a decline in the marriage rates of high school dropouts had a number of adverse consequences for their poverty status. By the end of the 1990s decade, poverty rates of families in the Commonwealth ranged from a high of 22 percent for those families with a householder lacking a high school diploma to 8 percent for those holding a high school diploma to a low of under one percent for families whose head held a Master's or higher degree.[24] The state's less educated adults are considerably more likely to depend on cash and in-kind government transfers to support themselves and their families, and they pay considerably less in federal and state taxes than their better educated counterparts. The poorly educated impose a fiscal burden on the rest of society as well as an economic burden on themselves.

The growing gender gaps in educational attainment in Massachusetts and the U.S. do not bode well for the future of marriage, out-of-wedlock childbearing, or family income inequality. Marriage patterns in the United States in recent decades have been characterized by a high degree of assortative mating; i.e., men tend to marry women from similar educational and socioeconomic backgrounds.[25] Women, in particular, seldom marry men with considerably less formal schooling than they possess. As women continue to outpace men in their acquisition of post-secondary degrees, one can expect well-educated women to confront a marriage squeeze, faced with an increasingly smaller pool of potential male mates with similar levels of formal schooling. Today, according to Sylvia Ann Hewlett, "high-achieving professional" women face difficulties in finding suitable men to marry and often end up childless when they do marry.[26] This existing problem is likely to become exacerbated if current educational trends persist. There will be even fewer men in the professional and managerial ranks relative to the increasing pool of college educated women, especially among Blacks and Hispanics, but also increasingly among Whites.

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[24] See: Andrew Sum, Mykhaylo Trub'skyy, et.al., Poverty in Massachusetts During the 1990s, Report Prepared for Massachusetts the Institute for A New Commonwealth, Boston, 2001.

[25] For a review of time trends in the assortative mating behavior of adults in the U.S., See: Robert A. Mare, "Five Decade of Educational Assortative Mating," American Sociological Review, Volume 56, 1991, pp. 15-32.

[26] See: Sylvia Ann Hewlett, Creating a Life: Professional Women and the Quest for Children, Talk Miramax, New York, 2002.

At the lower end of the educational spectrum, the continued high numbers of men lacking high school diplomas and with no formal schooling beyond high school will reduce their future earnings potential and make them less attractive marriage partners. The annual earnings of young men are strongly associated with their marriage rates, and single mothers frequently cite the poor labor market prospects of the fathers of their children as key factors inhibiting their willingness to consider them as suitable marriage partners.[27]

The growing educational divide between men and women in our state and the U.S. should, thus, be viewed as a serious economic, social, and family policy problem by the state's and nation's economic and educational policymakers. The issue has received scant attention from the media, educators, family advocates or policymakers.[28] For the future of both our state and the nation, the real facts underlying recent educational outcomes by gender must be faced. The growing gender gaps in educational attainment need to receive the immediate and sustained attention of our nation's and state's educational and economic policymakers. The future economic and social well-being of our state, its large cities, and our nation may well be at stake.

[27] See: (i) Andrew Sum and Neal Fogg, "The Changing Economic Fortunes of Young Black Men in America," The Black Scholar: Journal of Black Studies and Research, January-March 1990, Volume 21, No. 1, pp. 47-56; (ii) Kathryn Edin, "Few Good Men: Why Poor Women Don't Marry or Remarry," The American Prospect, Volume 11, No. 4, January 3, 2000.

[28] There are few exceptions to this pattern,
See: Christina Hoff Sommers, The War Against Boys, Simon and Schuster, New York, 2000.