

The College Majors of Class of 2001 Boston Public High School
Graduates Attending College at the Time of the Winter 2002
Follow-up Survey

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Table of Contents

Introduction.....	1
The College Majors of Class of 2001 Boston Public High School Graduates	2
Summary of Findings and Future Research Issues	8
Appendix A: Distribution of the College Majors of Class of 2001 Boston Public High School Graduates, Total and by Gender and Type of high School.....	9

Introduction

Since the mid-1980s, the Boston Private Industry Council (PIC) in cooperation with the city of Boston's public schools and the Center for Labor Market Studies of Northeastern University has conducted an annual follow-up survey of the graduates of Boston's public high schools from the preceding calendar year. The coverage and comprehensiveness of the annual follow-up survey is of each year's graduating class are unique in the nation. The survey tracks each graduate's schooling and labor market activities approximately 9 to 10 months after their graduation from high school. Very few high schools across the nation collect any systematic data on the college and employment status of their graduates other than brief exit surveys asking graduates to describe their college and job seeking plans. The main objective of the follow-up survey is to obtain information on each high school graduate's transition from high school to college and the world of work. Information is collected on graduates' college enrollment and employment status, the types of colleges or post-secondary training schools that they attended at the time of the survey, their college majors, their financial aid status, and key characteristics of their jobs, such as hours of work, hourly wages, occupations and industries of their employers, and their job related training activities. Such information helps the Boston public schools, the Boston PIC, and the Massachusetts Board of Education to better understand college enrollment and employment trends over the years and assist them in designing and implementing programs to enhance the college enrollment and employment status of Boston public high school graduates.

During the winter of 2002, Boston PIC staff made a comprehensive effort to interview each of the nearly 3,200 graduates of Boston public high schools from the Class of 2001. Follow-up interviews were completed with slightly more than 82 percent of the graduates, the highest interview completion rate achieved by the PIC since the late 1980's.¹

¹ Follow-up information is also obtained from the parents of the graduates or another responsible adult household member.

In this research report, we will provide a description and analysis of the college majors of Class of 2001 Boston public high school graduates who were enrolled in college at the time of the Winter 2002 follow-up surveys. What fields of study did Class of 2001 public school graduates choose during their first year in college? Did male and female graduates choose different majors? How different were the college majors of graduates from the exam schools and district/magnet schools? Among graduates of the exam schools and district/magnet schools which graduates were much more likely to study engineering, computer science, business, health, etc.? In this research report, we will provide answers for each of the above questions, based on our analysis of follow-up data for the Class of 2001. Findings on these important issues should help policy makers and program administrators of Boston public schools to expand their knowledge base on the post secondary educational experiences of graduates and assist them in realigning curriculum counseling and school-to-career programs to strengthen enrollments in particular fields of study. Generally, a student's chosen major will actually determine their future careers and earnings after they graduate.

The College Majors of Class of 2001 Boston Public High School Graduates

For the first time in 2002, the PIC follow-up questionnaire included an open-ended question asking graduates attending college to identify their college majors. An analysis of the findings for the entire sample of college attendees revealed that 21 percent of all graduates had not yet declared a major. A slightly higher percentage of women than men had not yet declared their college major at the time of the Winter 2002 follow-up survey (22.7% versus 19.9%). (Table 1). The most frequently cited major for all graduates was business (12%). Thirteen percent of male graduates reported a business major versus nearly 11 percent of the women. The second most frequently chosen college major for Class of 2001 Boston public high school graduates was computer science (6%); however, there were very large gender differences in this fields of study. Only two percent of the women had chosen computer science as their college major in comparison to 11 percent of the men. Eight percent of female graduates opted for nursing as their

college major while none of the men did so. Overall, male graduates were more likely to choose to major in the physical sciences, particularly engineering, computer science, while female graduates were more likely to choose nursing, psychology, communications, and liberal arts as their college majors. (See Appendix A for more details on college major distributions).

Top 1: College Majors of Class of 2001 Boston Public High School Graduates Attending College at the Time of the Follow-up Survey, Total and by Gender

<u>All</u>			<u>Women</u>		<u>Men</u>	
Rank	College Major	Percent	College Major	Percent	College Major	Percent
1	Undecided	21.5	Undecided	22.7	Undecided	19.9
2	Business	11.6	Business	10.6	Business	12.9
3	Computer Sciences	5.9	Nursing	8.1	Computer Sciences	11.2
4	Nursing	4.8	General Psychology	3.8	Communications	4.2
5	Communications	3.7	Communications	3.4	Computer System Engineering	4.1
6	Criminal Justice	3.6	Criminal Justice	3.3	Criminal Justice	4.1
7	General Psychology	2.5	Biology	2.6	Engineering	2.4
8	Accounting	2.0	Accounting	2.2	Accounting	1.8
9	Biology	1.9	Liberal Arts	2.2	Information Systems	1.6
10	Computer System Engineering	1.9	Computer Sciences	1.9	Graphic Design	1.6

We also classified the college majors of Class of 2001 graduates into twelve major field of study categories as follows:

- Business/Accountancy, Economics, and Management
- General Health/Medicine/Nursing
- Computer Science
- Engineering/Technical
- Liberal Arts/Humanities
- Criminal Justice/Law
- Social Sciences
- Education
- History/Philosophy

- Natural Sciences
- Physical Sciences
- Undecided

Our analysis of the findings on the regrouped college majors of Class of 2001 graduates revealed that nearly 18 percent of graduates had chosen business/accounting/economics/management as their college majors. (Chart 1). Another 13 percent had selected general health/medicine/nursing fields as their college majors followed by computer science (12%), engineering/technical (11%), and liberal arts/humanities (11%). We also analyzed the findings of the grouped college majors of male and female graduates from the Class of 2001. (Chart 2). Both men and women were equally likely to choose business/accounting/economics/ management as their college majors. However, health related college majors were dominated by female graduates. Only four percent of the male graduates from Boston public schools had selected general health, medicine, pharmacy, nursing as their college majors compared to 19 percent of the women. At the other end of the spectrum, male graduates dominated computer science and engineering/technical majors. Twenty percent of the male graduates had chosen computer science related fields as their college major versus only 5 percent of the women in this field. A similar pattern was observed in engineering/technical major, with 19 percent of male graduates opting for these fields of study compared to only 6 percent of female graduates. Substantially higher shares of female graduates than male graduates opted for college majors in such areas as social sciences and education. For example, in the fields of education, there were 56 women who chose to major in this field versus 14 men, a relative difference of 4 to 1.

Chart 1: Percent Distribution of Class of 2001 Boston Public High School Graduates

Attending College by College Major

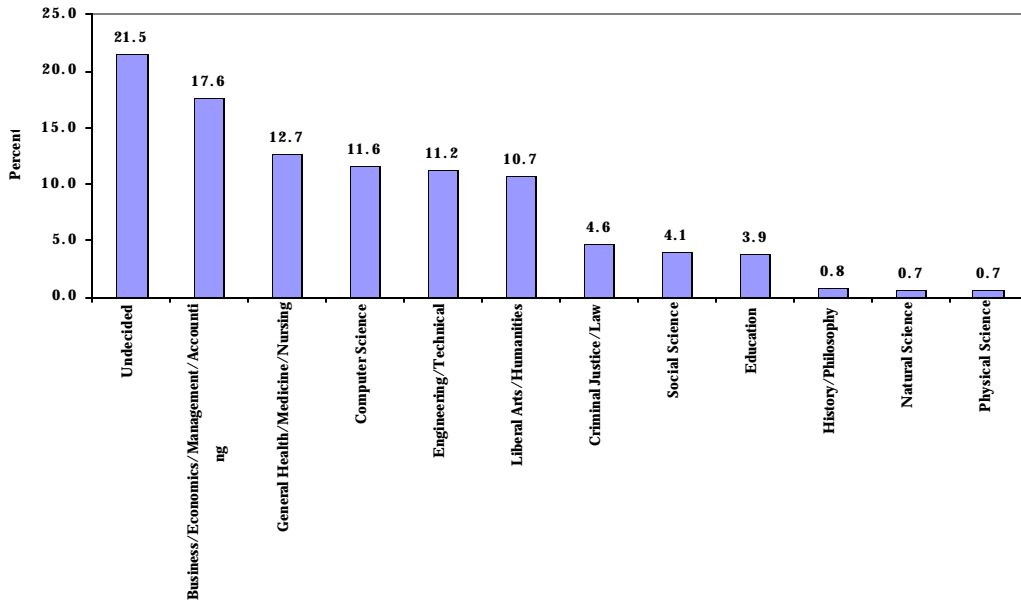
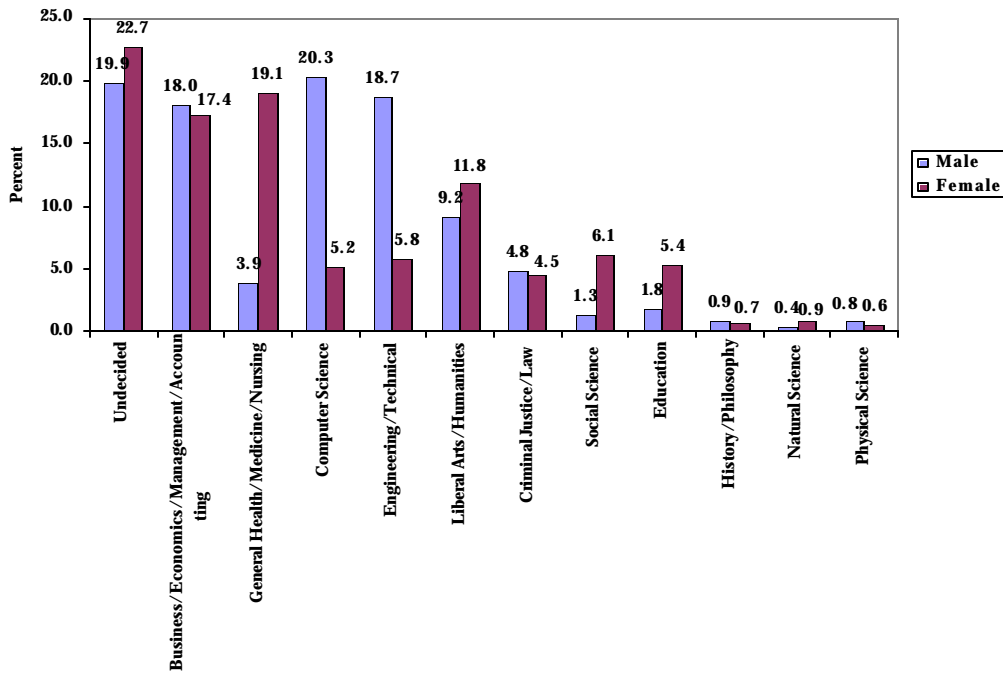


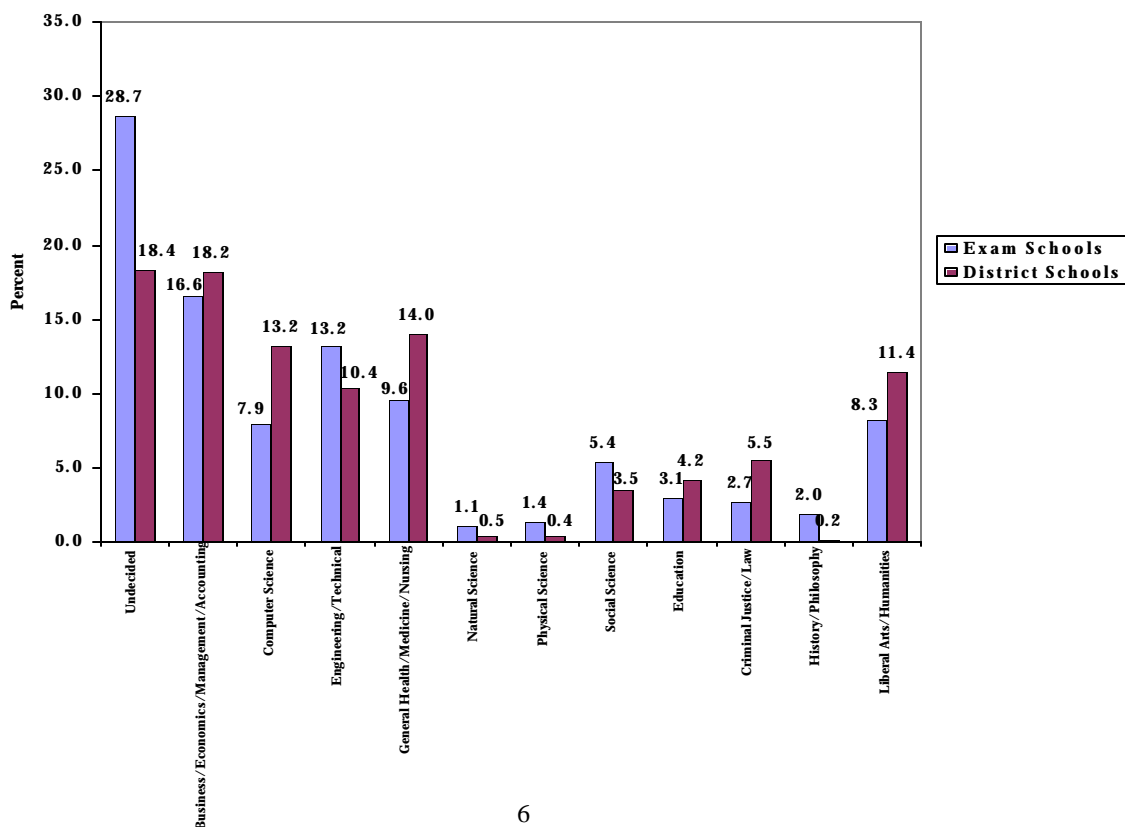
Chart 2: Percent Distribution of Class of 2001 Boston Public High School Graduates by

College Major and Gender



A further analysis was undertaken of the college majors of Class of 2001 graduates by type of high school attended. Findings revealed that a higher share of graduates from the city's three exam schools (Boston Latin, Latin Academy, an O'Bryant Technical) had undeclared majors in comparisons to their district/magnet school counterparts (28% versus 18%). Class of 2001 graduates from both the exam and district/magnet schools were equally likely to select business/accounting/ economics/ management as their college major. Surprisingly, graduates from the exam schools were less likely than their peers from the district/magnet schools to have computer science as their college major (8% versus 13%). In contrast, graduates from exam schools were more likely than their counterparts from district/magnet schools to identify engineering/technical fields as their college major (13% versus 10%). A higher share of graduates from district/magnet schools than the exam schools had general health/medicine/nursing as their college major (14% versus 9%). This result is likely attributable in part to the health-career orientation of a number of the school-to-career programs in the non-exam schools.

Chart 3: Percent Distribution of Collage Major of 2001 Boston Public High School Graduates, by Type of School



Given the importance of biotechnology to the state’s economy, manufacturing and research, we also were interested in examining the number of Class of 2001 Boston public high school graduates who selected biotech fields of study as their college major. Biotech was defined as comprising those who majored in biochemistry, biology, biotech, medical lab science, and molecular biology. Our findings revealed that there were a total of 50 graduates or nearly 3 percent of the total attending college who opted for a biotech major. (Table 2). Substantially higher number of female graduates than male graduates had chosen biotech as their college major. For example, the ratio of female to male graduates in this field of study was 3.2 for all schools, 2.8 for the exam schools and 3.5 for the district/magnet schools.

Table 2: Distribution of College Students from Class of 2001 Boston Public High School Graduates with Biotech as Their Chosen College Major at the Time of the Winter 2002

Follow-up Survey

	Total	Female	Male	Female to Male Ratio
Exam Schools	23	17	6	2.8
District/Magnet Schools	27	21	6	3.5
All Schools	50	38	12	3.2

Summary of Findings and Future Research Issues

The questionnaire that was used in conducting the follow-up survey of Class of 2001 graduates from the Boston public schools collected information for the first time on the major fields of study of those graduates who were attending college at the time of the winter 2002 follow-up survey. Findings of our analysis of the responses to the question on college major revealed that slightly over 21 percent of the college students had not yet identified a college major at the time of the survey (the end of their freshmen year). Of those with the declare major, the most frequently cited major were the following: business/accounting, health/pharmacy/nursing, computer science, engineering/technical, and liberal arts/humanities. Men and women were about equally likely to major in business/accounting/management, liberal arts/humanities and in criminal justice. However, there were substantial gender differences in most other fields. Women were far more likely than men to report major in health/nursing, education, and social sciences while males were considering more likely than women to major in computer science, engineering, and technical occupations.

There is a need for further research on two fronts. First, data from the Boston public school student transcripts and the PIC follow-up survey should be used to identify the factors influencing the college majors of graduates, including their achievement test scores, grade point average, high school courses, and their participation in selected type of school-to-career programs including Pro Tech and Academy programs. Second, longitudinal data on the post-secondary educational experiences of these college students should be collected and analyzed to determine the persistence rates of graduates from the Class of 2001 in college, their academic performance, and changes in their major fields of study as they move through their college years.

Appendix A: Distribution of the College Majors of Class of 2001 Boston Public High School Graduates, Total and by Gender and Type of high School

Table A: Distribution of College Majors of Class of 2001 Boston Public High School Graduates, Total and by Gender
(Numbers in Brackets are Percentages)

	Female	Male	Total
Undecided	237 (22.7)	152 (19.9)	389 (21.5)
Business/Economics/Management/Accounting	181 (17.4)	138 (18.0)	319 (17.6)
Computer Science	54 (5.2)	155 (20.3)	209 (11.6)
Engineering/Technical	60 (5.8)	163 (18.7)	203 (11.2)
General Health/Medicine/Nursing	199 (19.1)	30 (3.9)	229 (12.7)
Natural Science	9 (0.9)	3 (0.4)	12 (0.7)
Physical Science	6 (0.6)	6 (0.8)	12 (0.7)
Social Science	64 (6.1)	10 (1.3)	74 (4.1)
Education	56 (5.4)	14 (1.8)	70 (3.9)
Criminal Justice/Law	47 (4.5)	37 (4.8)	84 (4.6)
History/Philosophy	7 (0.7)	7 (0.9)	14 (0.8)
Liberal Arts/Humanities	123 (11.8)	70 (9.2)	193 (10.7)
Total	1,043 (100.0)	765 (100.0)	1,808 (100.0)

Table A2: Distribution of the College Majors of Class of 2001 Boston Public High School Graduates from the Exam Schools, Total and by Gender
(Numbers in Brackets are Percentages)

	Female	Male	Total
Undecided	100 (32.3)	59 (24.2)	159 (28.7)
Business/Economics/Management/Accounting	47 (15.2)	45 (18.4)	92 (16.6)
Computer Science	8 (2.6)	36 (14.8)	44 (7.9)
Engineering/Technical	22 (7.1)	51 (20.9)	73 (13.2)
General Health/Medicine/Nursing	45 (14.5)	8 (3.3)	53 (9.6)
Natural Science	5 (1.6)	1 (0.4)	6 (1.1)
Physical Science	3 (1.0)	5 (2.0)	8 (1.4)
Social Science	26 (8.4)	4 (1.6)	30 (5.4)
Education	15 (4.8)	2 (0.8)	17 (3.1)
Criminal Justice/Law	5 (1.6)	10 (4.1)	15 (2.7)
History/Philosophy	6 (1.9)	5 (2.0)	8 (2.0)
Liberal Arts/Humanities	28 (9.0)	18 (7.4)	46 (8.3)
Total	310 (100.0)	244 (100.0)	554 (100.0)

Table A3 : Distribution of College Majors of Class of 2001 Boston Public High School

Graduates from the District/Magnet High Schools, Total and by Gender

(Numbers in Brackets are Percentages)

	Female	Male	Total
Undecided	137 (18.8)	93 (17.9)	230 (18.4)
Business/Economics/Management/Accounting	134 (18.4)	93 (17.9)	227 (18.2)
Computer Science	46 (6.3)	119 (22.9)	165 (13.2)
Engineering/Technical	38 (5.2)	92 (17.7)	130 (10.4)
General Health/Medicine/Nursing	154 (21.1)	21 (4.0)	175 (14.0)
Natural Science	4 (0.5)	2 (0.4)	6 (0.5)
Physical Science	3 (0.4)	2 (0.4)	5 (0.4)
Social Science	38 (5.2)	6 (1.2)	44 (3.5)
Education	41 (5.6)	12 (2.3)	53 (4.2)
Criminal Justice/Law	42 (5.8)	27 (5.2)	69 (5.5)
History/Philosophy	1 (0.1)	2 (0.4)	3 (0.2)
Liberal Arts/Humanities	92 (12.6)	51 (9.8)	143 (11.4)
Total	730 (100.0)	520 (100.0)	1,250 (100.0)