



E&R Report No. 03.20

August 2003

WAKE COUNTY PUBLIC SCHOOL SYSTEM (WCPSS) GRADUATES AS UNC FRESHMEN: ACCEPTANCE AND PERFORMANCE TRENDS

Authors: Amy Overbay and Nancy Baenen

Abstract

This report summarizes information provided by the University of North Carolina (UNC) on the WCPSS graduates enrolled in UNC institutions between 1990 and 2001. Statistics from the UNC Office of General Administration show that during that period, a higher percentage of WCPSS graduates applied to and enrolled in UNC institutions, compared to NC graduates overall. Between 1991 and 2002, WCPSS graduates were also more successful in their first year of college, earning higher average GPAs than other UNC freshmen. Further, a higher percentage of WCPSS graduates took advanced courses, and a lower percentage required remedial courses. These data suggest that WCPSS graduates receive a strong preparation for college work, perhaps stronger than their counterparts from other districts, and that this preparation has improved over the past decade.

INTRODUCTION

Since 1992, the University of North Carolina's (UNC) Office of General Administration has distributed annual reports on high school graduates seeking admission to UNC system colleges, as well as reports on the academic performance of UNC freshmen at the end of their first year. These reports supply state, district, and school-level data, and focus on issues of interest to parents, teachers, and administrators. This newsletter summarizes information provided by UNC, and compares admissions data for WCPSS and NC graduates between 1990 and 2001, as well as performance data for WCPSS and other UNC freshmen between 1991 and 2002.

WCPSS tends to enroll a more advantaged population of students, compared to other NC districts. According to data provided by the Bureau of Economic Analysis (2002), Wake County ranks second in personal per capita income among North Carolina counties. Similarly, the percentage of students receiving free or reduced-price lunches in WCPSS schools (24.2%) is lower than the state average (38.4%), according to statistics collected by national agencies (NAEP, 2002; NCES, 2001). Because these factors have historical ties to school achievement, it is reasonable to expect that WCPSS graduates would apply and enroll in postsecondary

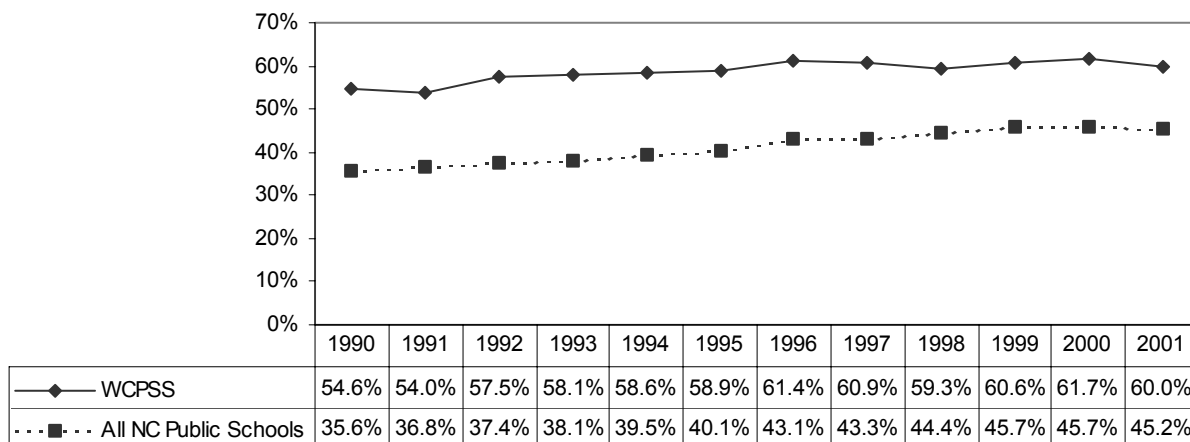
education at a higher rate, and would be more successful in their first year of college. Overall, the information provided in the annual UNC reports 1990-2002 confirms this expectation.¹

APPLICATIONS, ACCEPTANCE, AND ENROLLMENT

Statistics collected by UNC’s Office of General Administration from 1990 to 2001 reveal that:

- In each year, a higher percentage of WCPSS graduates applied to at least one UNC institution, compared to NC public high school graduates overall.
- During this period, the percentage of NC public high school graduates applying to at least one UNC institution increased substantially, from 35.6% in 1991 to 45.2% in 2001. The percentage of WCPSS graduates applying to UNC institutions also increased, from 54.6% in 1990 to 60.0% in 2001.
- The net trend in the percentage of graduates applying was positive, although this figure varied somewhat for WCPSS graduates across the decade. The percentage of WCPSS graduates applying to UNC institutions peaked in 2000, when 61.7% of all graduates applied to at least one state-supported university.

Figure 1
Percentage of Graduates Applying to at Least One UNC Institution,
Fall 1990 - Fall 2001



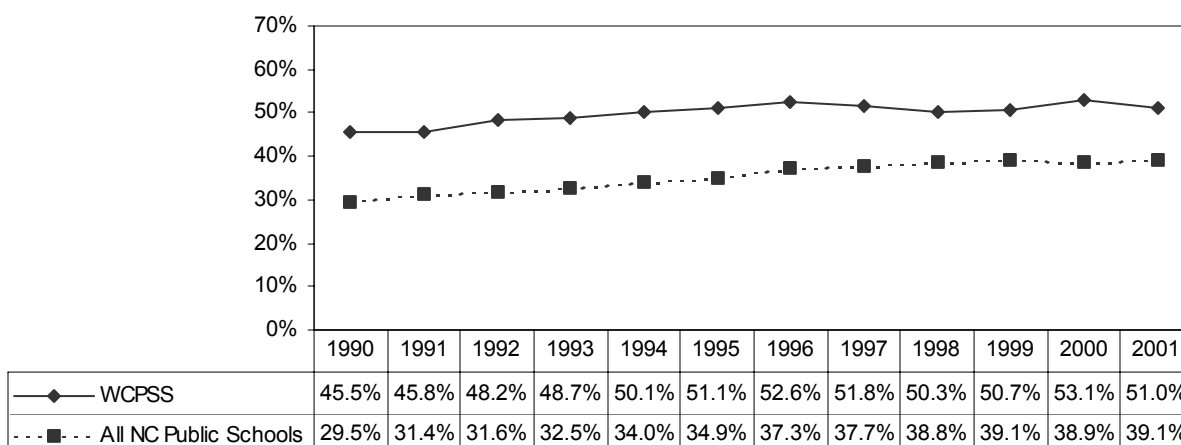
- Notes:
1. Admissions and enrollment data prior to 1992 are not available for private school or out-of-state graduates.
 2. The number of students represented varies by year. The number of WCPSS applicants ranged from 2,066 in 1990 to 2,962 in 2001; the number of NC public school applicants ranged from 22,970 in 1990 to 28,042 in 2001.

¹ Figures for “NC public school graduates” and all “UNC freshmen” include WCPSS graduates; if WCPSS graduates were not included in these figures, averages for these two groups would be lower on virtually every measure included in this report.

Admissions records for WCPSS and other NC high school graduates demonstrate a similar pattern:

- As was the case for applications, a higher percentage of WCPSS graduates was admitted to at least one UNC institution, compared to NC public school graduates, with the percentage of WCPSS graduates accepted over 11 percentage points higher in each year.
- Similarly, the percentage of both NC public school and WCPSS graduates accepted at UNC schools rose during this period, with the percentage of WCPSS graduates accepted peaking at 53.1% in 2000.
- For WCPSS graduates, the percentage of graduates accepted rose from 45.5% to 51%, and for NC public school graduates, acceptance rates rose from 29.5% to 39.1%. Thus, the increase for NC public school graduates was greater, in absolute terms.

Figure 2
Percentage of Graduates Accepted by at Least One UNC Institution,
Fall 1990 - Fall 2001



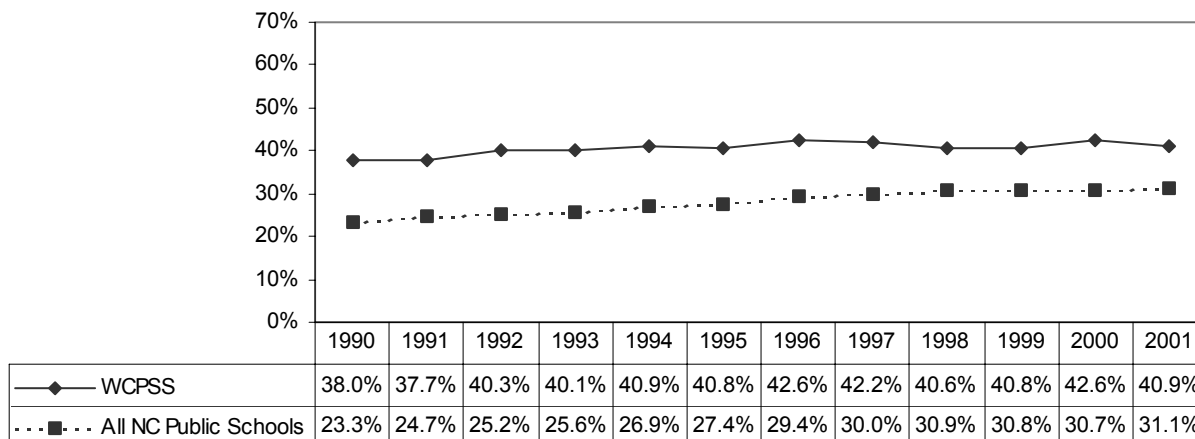
Note: The number of students represented varies by year. The number of WCPSS graduates accepted ranged from 1,720 in 1990 to 2,548 in 2001; the number of NC public school graduates accepted ranged from 19,050 in 1990 to 23,834 in 2001.

Enrollment figures for 1990-2001 also paint a favorable picture of WCPSS graduates:

- In each year, a higher percentage of WCPSS graduates was enrolled in UNC institutions, compared to graduates of NC public high schools.
- However, between 1990 and 2001, the difference in the percentage of WCPSS and NC graduates enrolled in UNC institutions decreased, reflecting the fact that the percentage of NC public high school graduates seeking admission to UNC institutions grew more quickly during this period.
- A comparison of the admissions and enrollment data for WCPSS and NC public school graduates indicates that the difference between the percentage of graduates admitted and

enrolled during this period was greater for WCPSS graduates than for NC public school graduates. This difference may be due to some WCPSS graduates' decision to attend private or out-of-state institutions.

Figure 3
Percentage of Graduates Enrolling in a UNC Institution,
Fall 1990 - Fall 2001



Note: The number of students represented varies by year. The number of WCPSS graduates enrolled ranged from 1,381 in 1991 to 2,097 in 2001; the number of NC public school graduates enrolled ranged from 15,069 in 1991 to 19,495 in 2001.

FRESHMAN PERFORMANCE

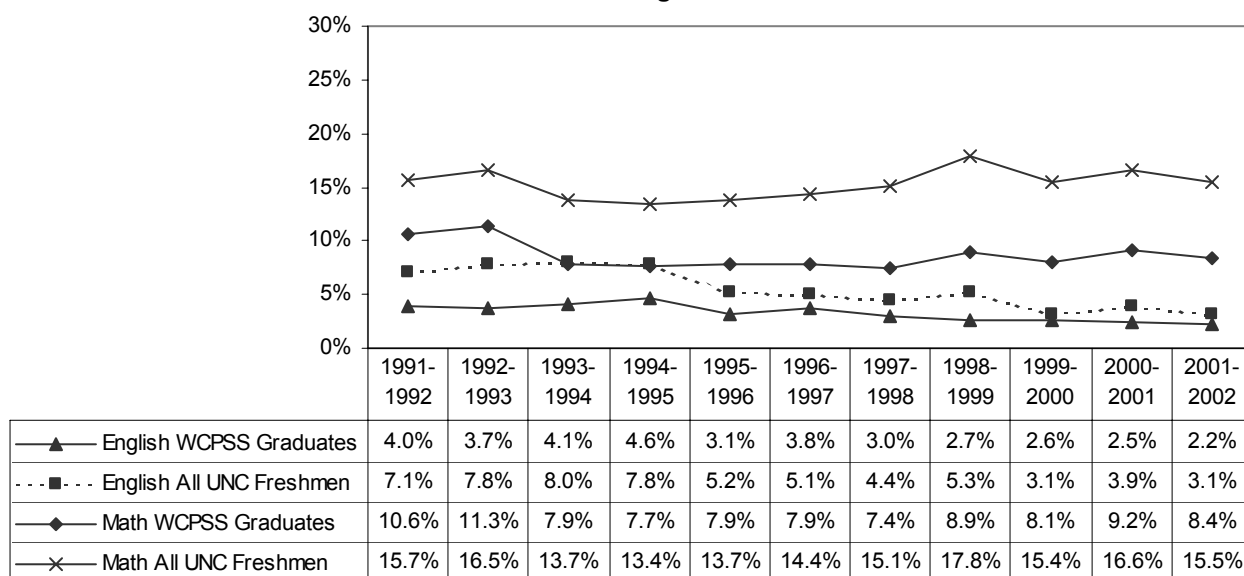
Three important components of freshman performance, the percentage of students in remedial classes, the percentage of students in advanced classes, and freshman grade point average (GPA), reveal that during the 1990s, WCPSS graduates outperformed other NC public and private school graduates and out-of-state students enrolled in UNC institutions.

One indicator of high school quality involves the percentage of graduates requiring remediation in their first year of college (Hoyt & Sorenson, 2001). Students who do not meet a UNC institution's criteria for placement into regular freshman math or English classes are required to take additional courses to prepare for college-level work.

- Between 1991-92 and 2001-02, a lower percentage of WCPSS graduates was enrolled in remedial courses at UNC institutions, compared to UNC freshmen, overall. The difference between the percentage of WCPSS graduates and all graduates taking remedial classes was greater for math courses than English courses.
- The percentage of both WCPSS and other graduates enrolled in remedial courses decreased slightly between 1991-92 and 2001-02, though these figures have varied during the past decade. By 2001-02, only 2.2% of WCPSS freshmen required remediation in English, compared to 3.1% of all UNC freshmen, and 8.4% of WCPSS freshmen required remediation in math, compared to 15.5% of UNC freshmen overall.

- In each year, the percentage of freshmen enrolled in remedial math courses was 2-3 times greater than the percentage enrolled in remedial English courses, for both WCPSS graduates and UNC freshmen, overall.
- For all UNC freshmen, the gap between the percentage of students taking remedial English and remedial math increased between 1991-92 and 2001-02, as the percentage of students taking remedial English declined more quickly, relative to the percentage of students taking remedial math.

Figure 4
Percentage of Students Enrolled in Remedial English or Math Courses as Freshmen, 1991-92 through 2001-02



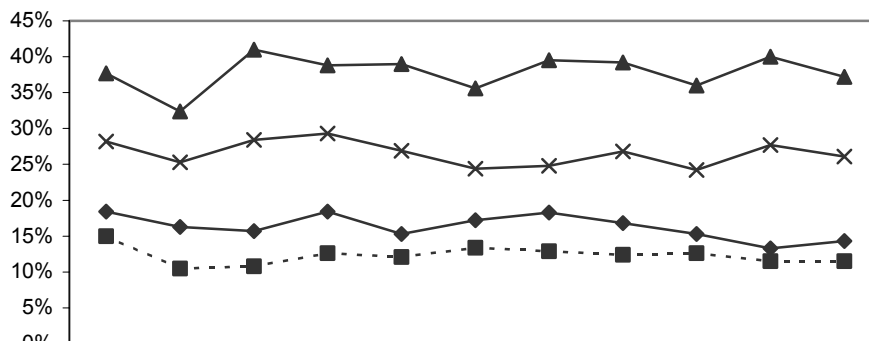
- Notes:
1. Freshman performance data prior to 1991-92 was not available.
 2. The number of students represented varies by year. The number of WCPSS graduates taking remedial English and/or Math courses ranged from 126 in 1997-98 to 188 in 2000-01; the number of other UNC freshmen taking remedial English and/or Math courses ranged from 2,694 in 1994-95 to 3,995 in 2000-01.

Another measure of high school educational quality involves the percentage of students taking advanced courses during their freshman year of college. Students who meet institutional criteria for advanced placement (through AP test scores, SAT scores, or institutional placement tests) are often able to bypass “regular” freshman courses, and take classes within their majors sooner.

- Although this figure varied during this period, a higher percentage of WCPSS graduates received advanced placement in English and took higher-level math courses, compared to their counterparts from other public and private high schools.
- The proportion of freshmen taking advanced courses increased during the 1990s for both WCPSS and other graduates at UNC institutions.

- Interestingly, a higher percentage of graduates from both WCPSS and other schools took higher-level math courses than English courses, although the percentage of students taking *remedial* math courses was also greater than the percentage of students taking remedial English courses.

Figure 5
Percentage of Students With Advanced Placement
in English or Math Courses as UNC Freshmen,
1991-92 through 2001-02



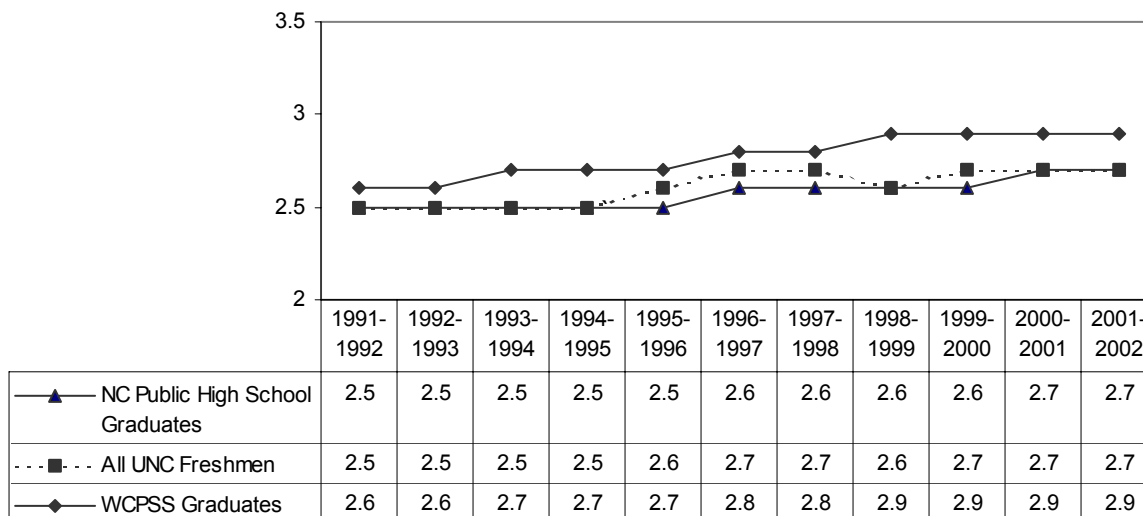
| | | | | | | | | | | | |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| —◆— English WCPSS Graduates | 18.4% | 16.3% | 15.7% | 18.4% | 15.3% | 17.2% | 18.3% | 16.8% | 15.3% | 13.3% | 14.3% |
| - - ■ - - English All UNC Freshmen | 15.0% | 10.5% | 10.8% | 12.6% | 12.1% | 13.4% | 12.9% | 12.4% | 12.6% | 11.5% | 11.5% |
| —▲— Math WCPSS Graduates | 37.7% | 32.4% | 41.0% | 38.8% | 39.0% | 35.6% | 39.5% | 39.2% | 36.0% | 40.0% | 37.2% |
| —×— Math All UNC Freshmen | 28.2% | 25.3% | 28.4% | 29.3% | 26.9% | 24.4% | 24.8% | 26.8% | 24.2% | 27.7% | 26.1% |

- Notes:
1. Higher-level math courses are defined as “Calculus or above” in the annual UNC report.
 2. The number of students represented varies by year. The number of WCPSS graduates taking advanced English and/or Math courses ranged from 479 in 1992-93 to 818 in 2000-01; the number of other UNC freshmen taking remedial English and/or Math courses ranged from 5,090 in 1992 to 5,161 in 2001-02.

A third measure of freshman performance involves freshman GPA at the end of the second semester. As with the percentage of students taking remedial and advanced courses, this measure suggests that WCPSS graduates tended to be more successful than graduates from other districts during their freshman year of college.

- Between 1991-1992 and 2001-2002 the average GPA of WCPSS graduates was consistently higher than the average for UNC freshmen at the end of the second semester.
- The average GPA for both groups of students rose during the 1990s, from 2.6 to 2.9 for WCPSS graduates, and from 2.5 to 2.7 for all UNC freshmen. The GPA of WCPSS graduates increased more substantially, in absolute terms, compared to the average GPA of all UNC freshmen.

Figure 6
Average Freshman GPA at UNC Institutions,
1991-92 through 2001-02



Note: The number of students represented varies by year. The number of Wake County graduates enrolled ranged from 1,381 in 1991-92 to 2,097 in 2001-02; the number of NC public school graduates enrolled ranged from 15,069 in 1991 to 19,495 in 2001-02. The total number of UNC freshmen ranged from 19,359 in 1991 to 25,046 in 2001-02.

Attachment A includes an analysis of student performance by subject between 1991-92 and 2001-02.

- For each subject (English, math, physical science, biological science, social studies, and foreign language), a higher percentage of WCPSS graduates earned a grade of “C” or better, compared to all UNC freshmen. The trend was more complex for freshmen enrolled in biology courses, with the average for WCPSS graduates in biology dropping below the average for other graduates in 1996-97 and 1998-99. However, by 2001-02, the difference between WCPSS and UNC freshmen overall was greatest in biology (10.2 percentage points).
- A higher percentage of WCPSS graduates maintained a “C” average or better in English (93.1% in 2001-02) and foreign language courses (94.4% in 2001-02) than in any other subject area. Physical science had the next highest average with 87.0% of WCPSS students earning a C or better in 2001-02. As was the case for UNC freshmen overall, a lower percentage of WCPSS graduates earned a “C” average or better in math (76.7% in 2001-02), social studies (85.6% in 2001-02), and biology (84.1% in 2001-02).

Attachment B includes the most recent breakdown of admissions and performance data for graduates of individual WCPSS high schools. Additional systemwide and individual school performance data are available at http://www.ga.unc.edu/student_info/far/.

References

- Bureau of Economic Analysis (2002). Per capita personal income by county, 2000. Retrieved July 11, 2003 from the North Carolina Department of Public Instruction Web site: <http://www.ncpublicschools.org/fbs/selectfindata/table9.htm>
- Hoyt, J.E. & Sorensen, C.T. (2001). High school preparation, placement testing, and college remediation. Journal of Developmental Education, 25(2), 26-34.
- National Assessment of Educational Progress. (2003). State profiles. Retrieved July 11, 2003 from the National Center for Education Statistics (NCES) Web site: <http://nces.ed.gov/nationsreportcard/states/profile.asp>
- National Center for Educational Statistics. (2001). Characteristics of the 100 largest public elementary and secondary districts in the United States, 2000-2001. Retrieved July 11, 2003 from the National Center for Education Statistics (NCES) Web site: http://nces.ed.gov/pubs2002/100_largest/table_09_1.asp
- UNC Office of General Administration. (1992). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (1993). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (1994). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (1995). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (1996). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (1997). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (1999). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (2000). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (2001). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.
- UNC Office of General Administration. (2001). North Carolina High School Feedback Reports. Chapel Hill, NC: University of North Carolina.

ATTACHMENT A

Figure 7
Percentage of Students Earning C or Better in English,
1991-92 through 2001-02

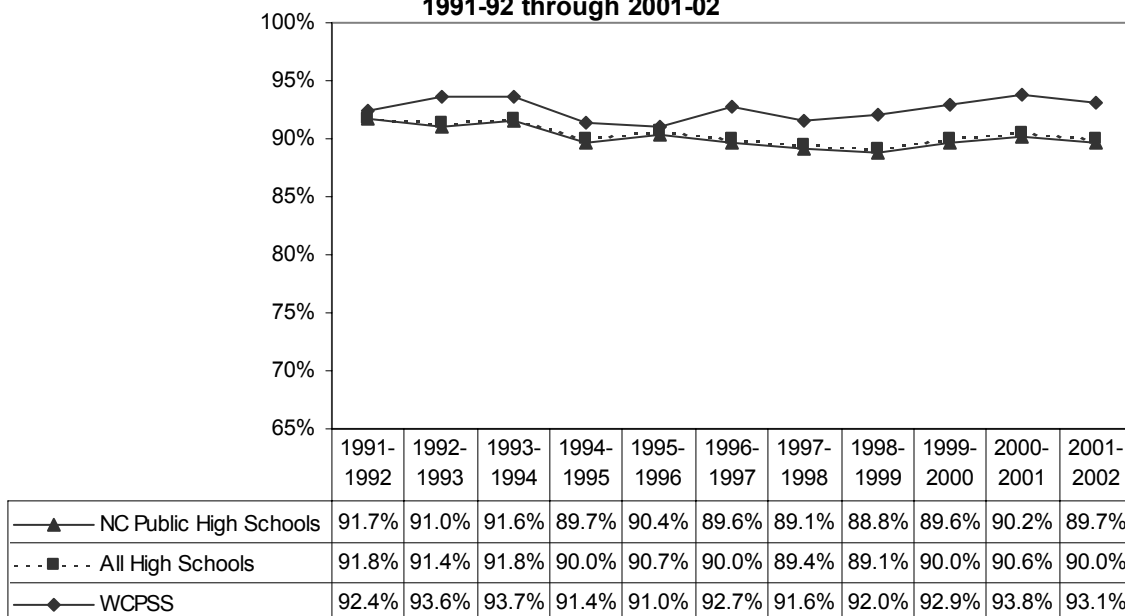


Figure 8
Percentage of Students Earning C or Better in Math,
1991-92 through 2001-02

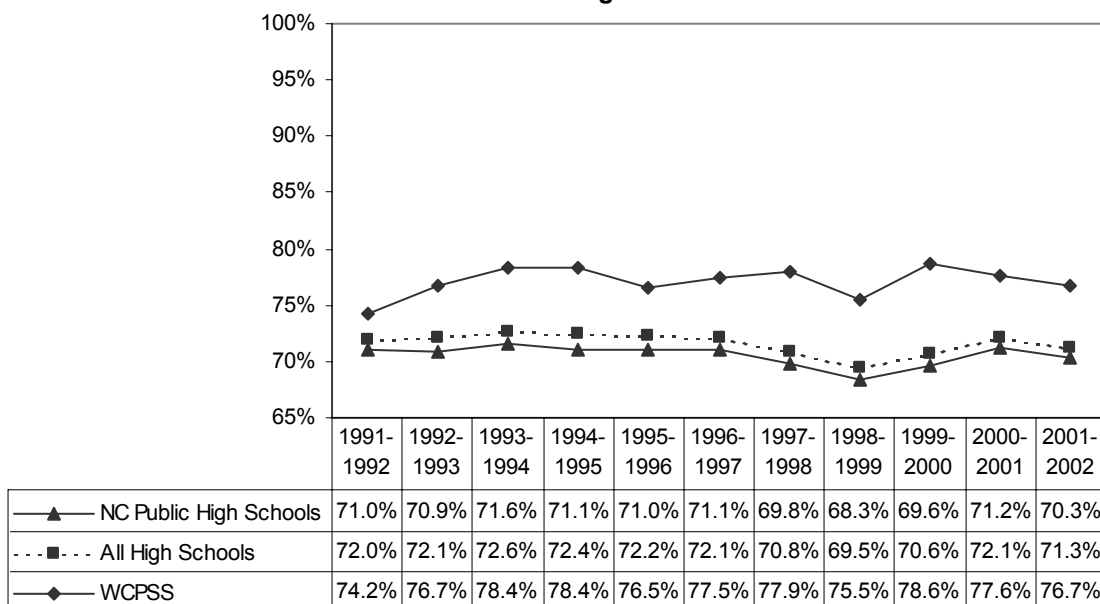


Figure 9
Percentage of Students Earning C or Better in Physical Sciences,
1991-92 through 2001-02

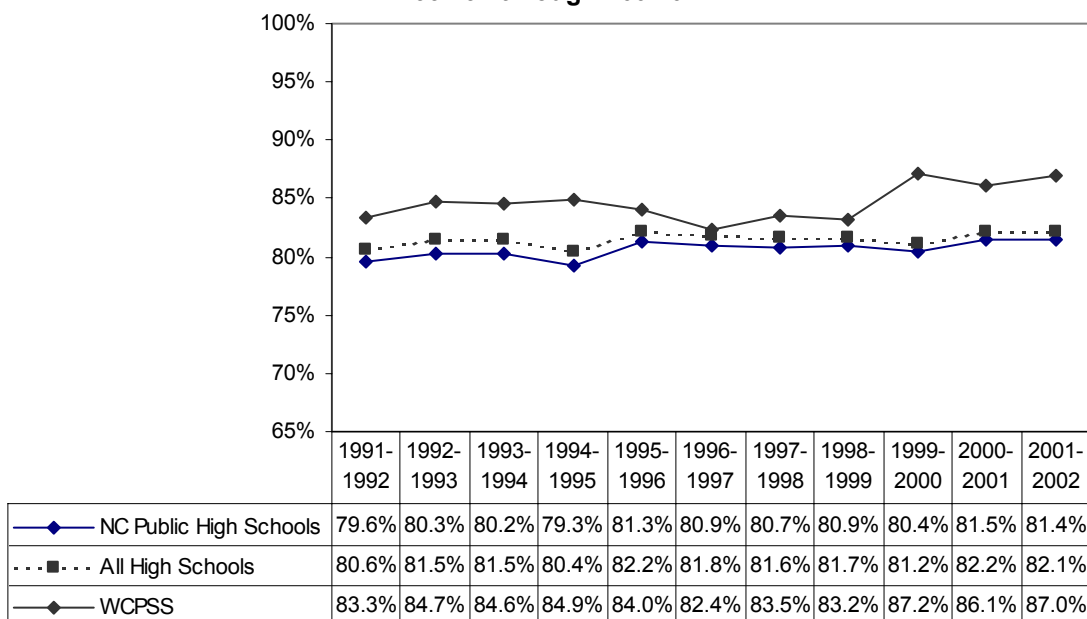


Figure 10
Percentage of Students Earning C or Better in Biology,
1991-92 through 2001-02

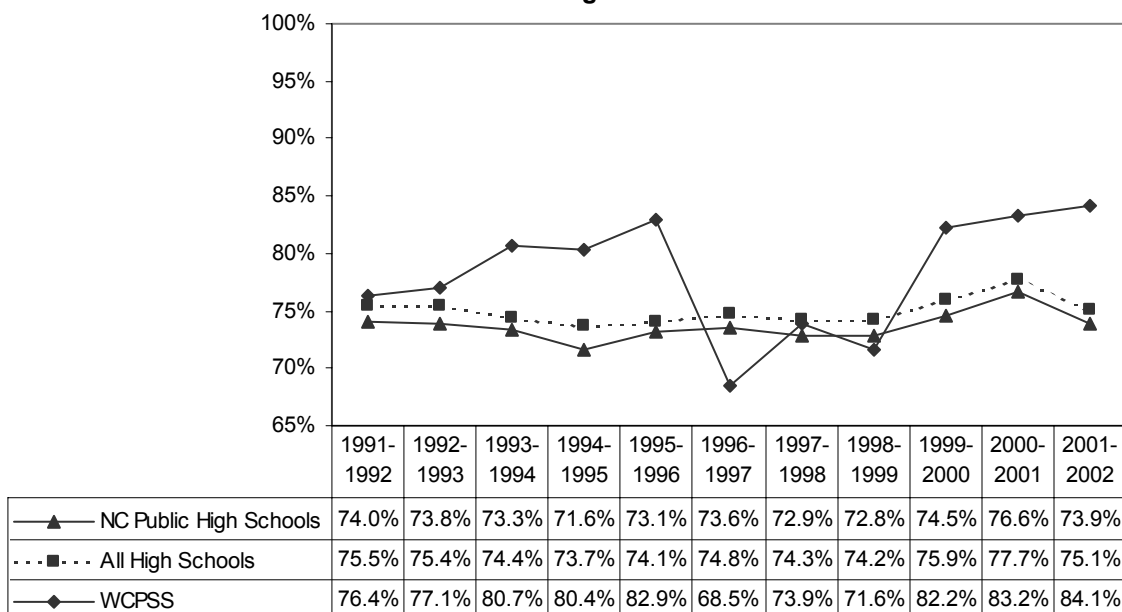


Figure 11
Percentage of Freshmen Earning C or Better in Social Studies,
1991-92 through 2001-02

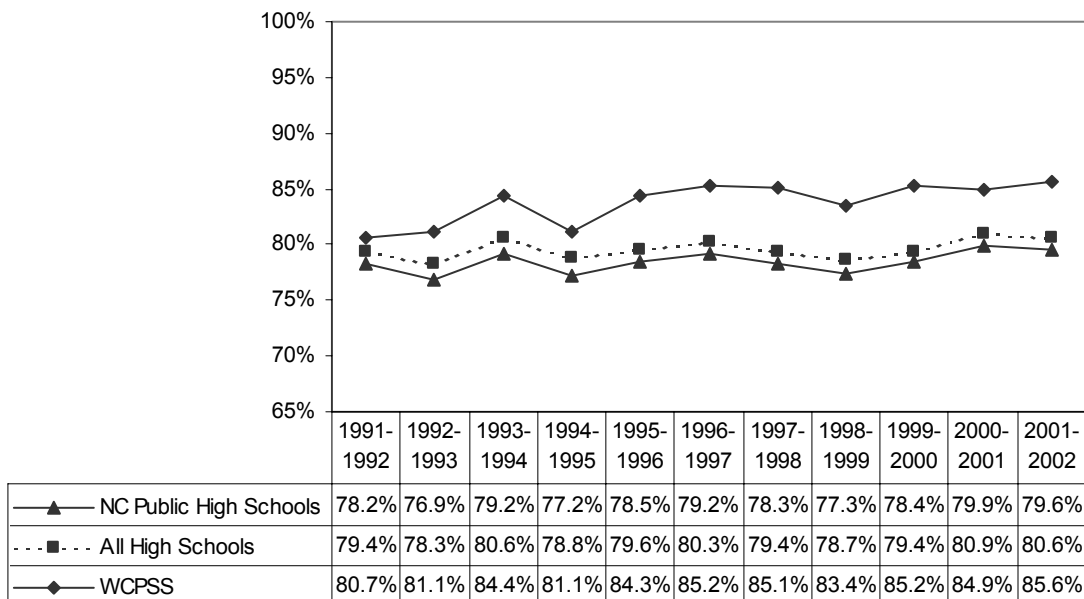
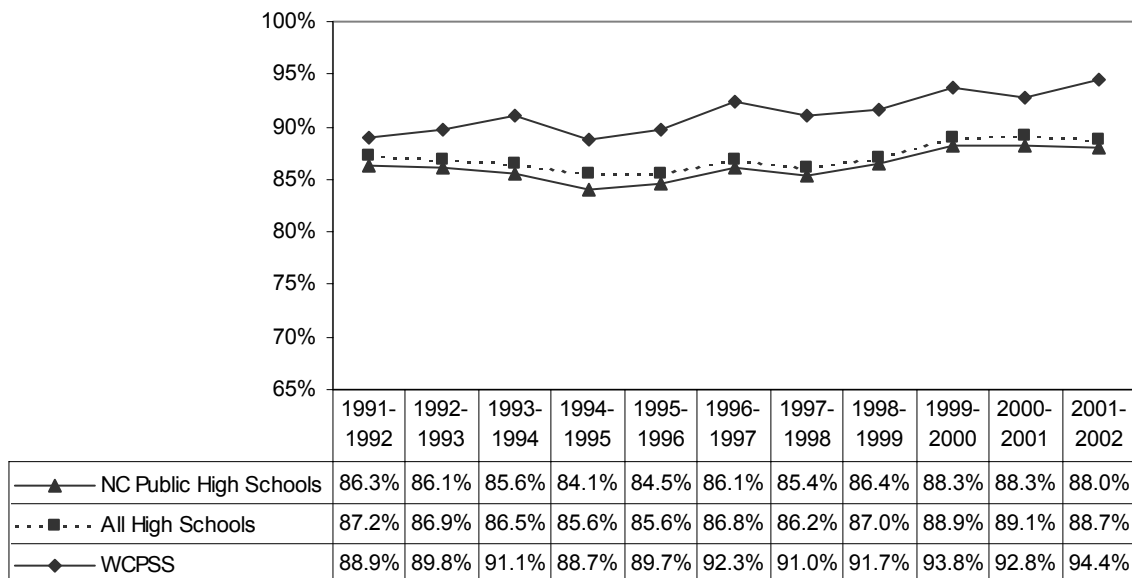


Figure 12
Percentage of Students Earning C or Better in Foreign Language,
1991-92 through 2001-02



ATTACHMENT B

Figure 13
UNC Applications, Admissions, and Enrollment Data for WCPSS Graduates (N=5,139), By School
2001-02

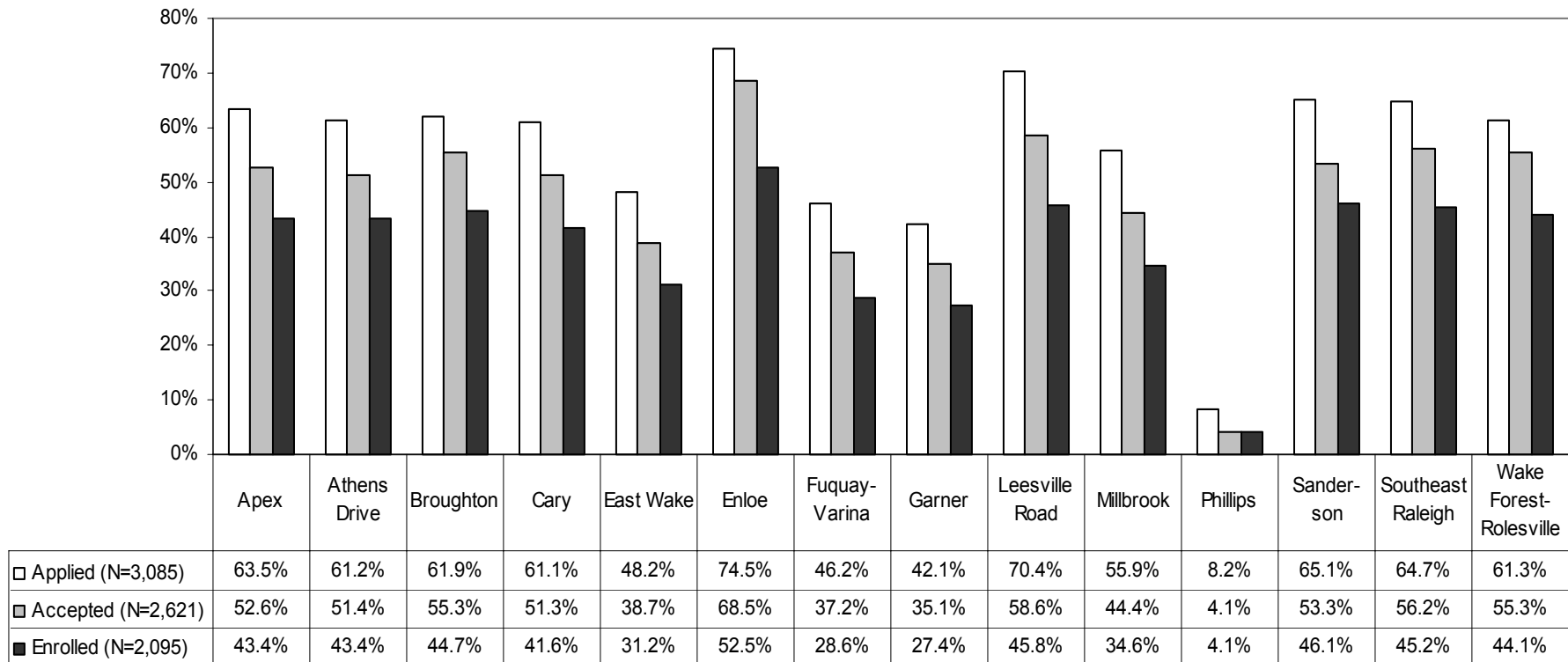


Table 1
WCPSS UNC Freshmen Placement and Performance, by High School
2001-2002

| WCPSS High School | Number of Freshmen | Average GPA | GPA at least 2.0 | % Remedial English | % Remedial Math | % Advanced Placement in English | % Calculus or Above* |
|------------------------|--------------------|-------------|------------------|--------------------|-----------------|---------------------------------|----------------------|
| Apex | 216 | 3.1 | 91.7% | 1.4% | 3.3% | 17.7% | 42.2% |
| Athens Drive | 141 | 3.0 | 84.4% | 3.6% | 3.6% | 14.8% | 49.0% |
| Broughton | 145 | 2.9 | 82.8% | 4.2% | 7.6% | 12.5% | 40.7% |
| Cary | 197 | 3.0 | 87.4% | 2.6% | 5.6% | 16.9% | 36.6% |
| East Wake | 88 | 2.7 | 77.3% | 1.2% | 9.1% | 6.9% | 22.8% |
| Enloe | 263 | 3.1 | 89.0% | 2.3% | 8.0% | 24.0% | 43.0% |
| Fuquay-Varina | 86 | 2.9 | 86.1% | 0.0% | 14.0% | 4.7% | 30.3% |
| Garner | 107 | 2.6 | 72.9% | 1.9% | 12.2% | 3.8% | 27.2% |
| Leesville Road | 212 | 2.9 | 83.5% | 1.9% | 8.1% | 17.0% | 35.9% |
| Millbrook | 124 | 2.9 | 90.4% | 1.7% | 10.5% | 8.1% | 33.1% |
| Phillips | 3 | 1.4 | 33.4% | 0.0% | 0.0% | 33.4% | 33.4% |
| Sanderson | 150 | 2.9 | 84.8% | 2.1% | 6.1% | 14.7% | 50.7% |
| Southeast Raleigh | 222 | 2.8 | 82.5% | 3.2% | 16.7% | 13.6% | 28.0% |
| Wake Forest-Rolesville | 141 | 2.8 | 80.9% | 2.2% | 7.9% | 8.6% | 31.3% |
| Total/Average | 2095 | 2.9 | 84.9% | 2.3% | 8.4% | 14.3% | 37.2% |

Note: Data for % *in calculus or above* = Calculus and other math courses that are higher than calculus