The University of North Carolina
Board of Governors

Supplement to Long-Range Planning 2004-2009

Trends Affecting North Carolina Higher Education

III. Trends Affecting North Carolina Higher Education

This section describes trends in the State and in the Nation that will have an impact on how the University accomplishes its mission for the remainder of this decade. These trends and the challenges and opportunities that they represent inform the strategic directions adopted by the Board of Governors for the period 2006-2011.

A. Demographic Trends

National demographic trends from the 2000 Census: The US population, while continuing to grow through births and immigration, is becoming proportionately smaller compared to the rest of the world's population, and it is becoming older and more diverse ethnically and racially. In Census 2000, 281.4 million people were counted in the United States, a 13.2 percent increase over 1990 and the largest numerical increase in US history. By July 2004, the population had increased by 4.3 percent to 293.7 million. During the three decades from 2000 to 2030, the South is projected to add the most residents (43 million), followed by the West (28.9 million), the Midwest (6.1 million) and the Northeast (4.1 million).

Among age groups in the United States, the strongest growth during this decade will occur in the 35-65 age group, whose members will subsequently inflate the number of persons aged 65 and older. By 2020, about 18 percent of the US population will be over 65, compared to 14 percent today.

Overall, the US population will become increasingly diverse due to changed patterns of immigration and differential birth rates among various racial and ethnic groups. The majority of immigrants to the US in the first half of the 20th century came from European countries, whereas the majority of immigrants in recent years have come from Asia and Latin America. According to the most recent US Census Bureau projections, by 2020, Hispanics will constitute 16 percent of the US population and African Americans 13 percent. The Hispanic population in the US exceeded 41million in 2004 and is increasing at three times the rate of total population growth.

Population trends in North Carolina: North Carolina's population will continue to exceed the national average in growth rate and will become more diverse. The State is outpacing growth and level of diversity projected by the Census Bureau in 1995. Although North Carolina ranked eleventh in the Nation in total population, it was sixth in population increase in Census 2000—a 21.4 percent increase over its 1990 population. From 2000 to 2030, North Carolina's population is projected to increase by over 4.178 million—a 52 percent increase—and have the Nation's seventh largest population. Only four states (California, Florida, Texas, and Arizona) will grow faster during this period. Nearly a quarter of North Carolina's population is 18 years old or younger (24.4 percent), and 12 percent of its population is 65 or older.

North Carolina has a larger percentage of African American (21.6 percent) and American Indian (1.2 percent) residents than the national average (12.3 percent and 0.9 percent). It has a lower proportion of white (72.1 percent compared to 75.1 percent), Asian (1.4 percent compared to 3.6 percent), and Hispanic (4.7 percent compared to 12.5 percent) residents than the national average. The implication of this is that North Carolina is already a more diverse state than the national average, and it is becoming increasingly more diverse.

In 1995 North Carolina's population was projected by the Census Bureau to grow from 7,777,000 in 2000 to 8,840,000 by 2015. More recent projections show that the State is growing much faster than projections of a decade ago suggested. NC's actual population in Census 2000 was 8.049 million (compared to the projected 7.777 million), and more recent projections show the State already having a larger population by 2010 than was originally

projected for 2015. **Figure III.1** shows North Carolina's Census 2000 population (8,049,000) and its projected population by decade to 2030.

Figure III.1. Projected Growth in North Carolina's Population (in millions): 2000–2030

(US Census Bureau)

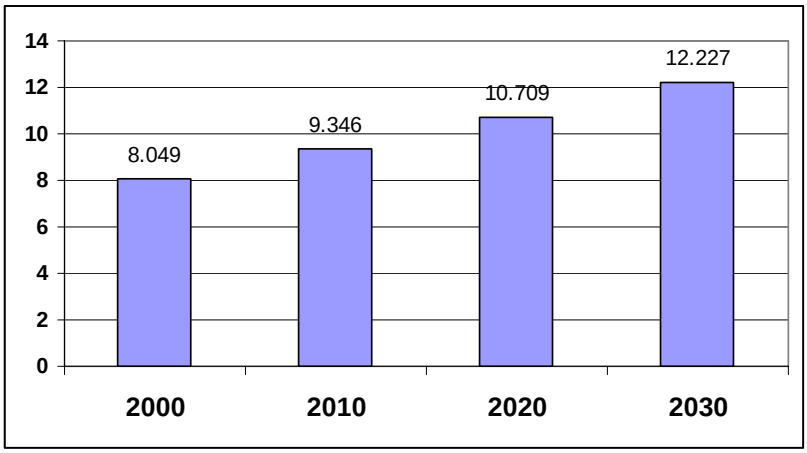
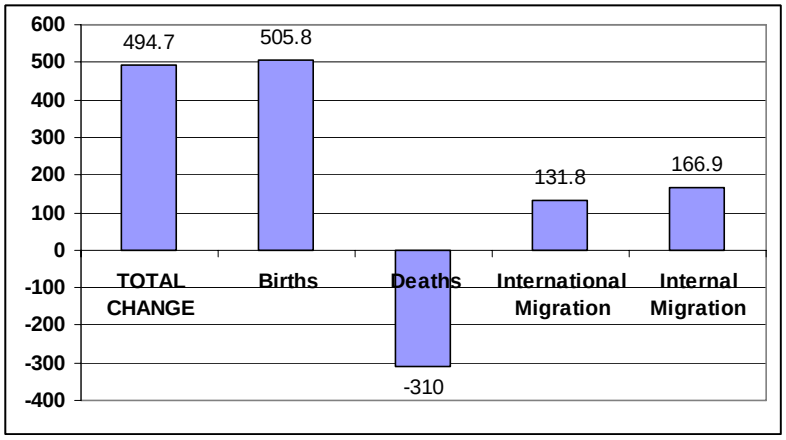


Figure III.2 shows that most of North Carolina's population increase currently comes from in-state births and domestic in-migration, as opposed to international immigration. As various businesses and industries have relocated to North Carolina in the last decade, they have brought a number of employees from other states with them. More recently, North Carolina has experienced substantial in-migration of workers, largely Hispanic, in labor-intensive industries such as manufacturing and agriculture. There is evidence that international in-migration will continue to increase.

Figure III.2. Components of Population Change for North Carolina: 2000–2004 (in thousands)

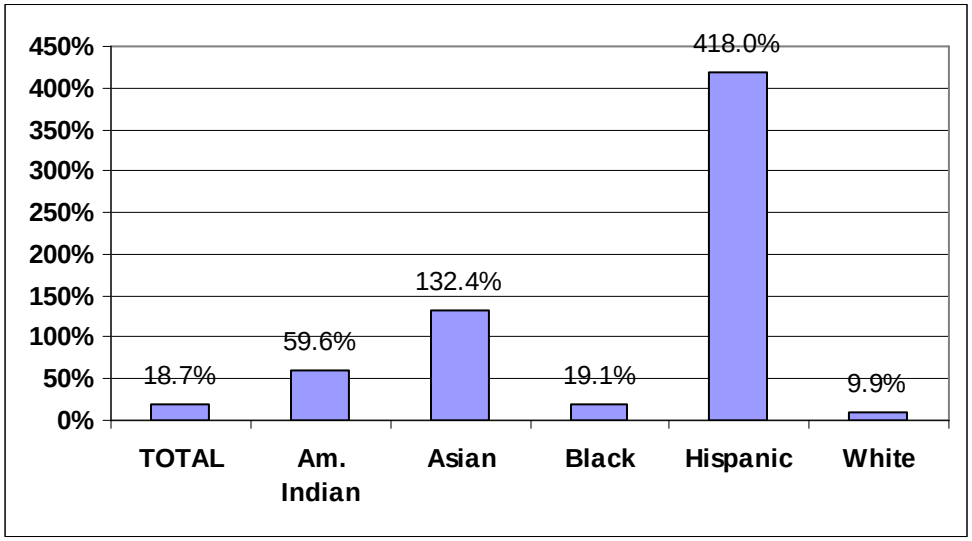
(US Census Bureau)



Because of the substantial in-migration to North Carolina, the State is becoming more racially and ethnically diverse. Although from 1995 to 2004, North Carolina's white population grew the most numerically (527,000), the State's Hispanic population had the second largest numerical increase (418,000, up from 100,000 in 1995). **Figure III.3** shows the percentage population growth for various North Carolina racial and ethnic groups from 1995 to 2004.

Figure III.3. Percentage Growth of North Carolina Racial and Ethnic Groups: 1995–2004

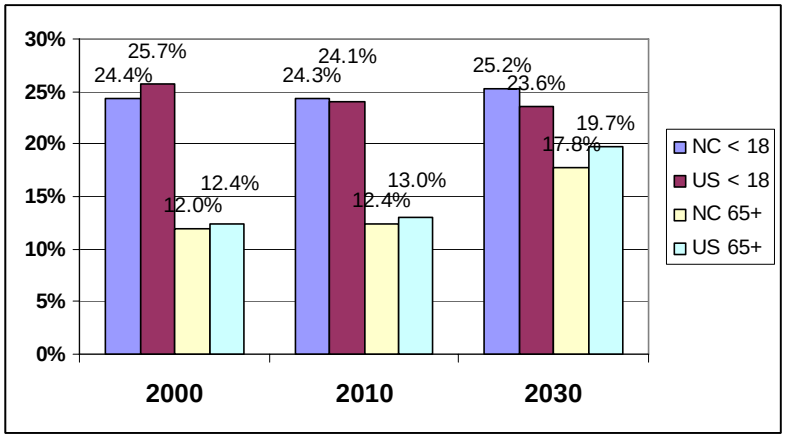
(US Census Bureau)



Also due to the significant in-migration that North Carolina is experiencing, the State is projected to have a somewhat younger population in coming decades than national averages. **Figure III.4** shows state and national projected percentage changes for the younger than 18 and 65 and older age groups. North Carolina's school age population (younger than 18) percentage is projected to increase from less than the national average percentage to greater. Although like all states, North Carolina's 65 and older population will increase substantially, its overall percentage will be well under the national average due to the growth of younger age groups in the State.

Figure III.4. Percentage Change in North Carolina and US Population by Age Groups: 2000–2030

(US Census Bureau)

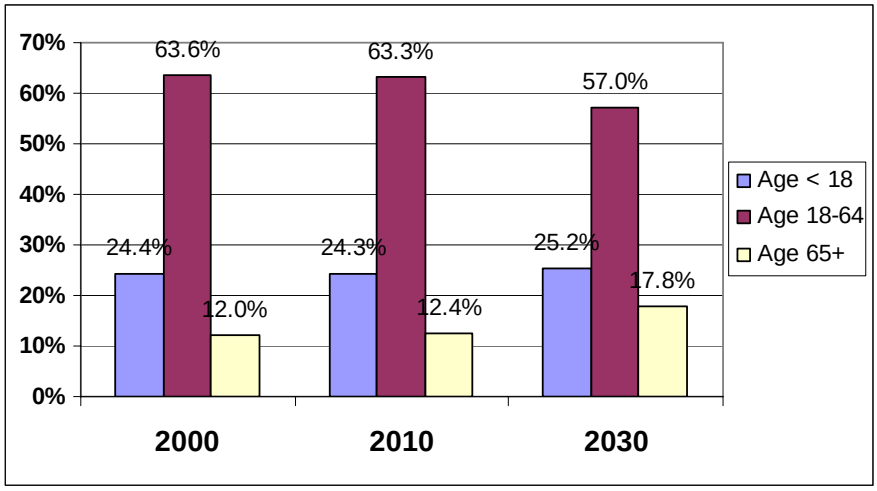


The projections in **Figure III.3** take on added significance when they are used to calculate the "dependency ratio"—the ratio of working age adults compared to the school-age and retirement-age segments of the State's population. As **Figure III.5** shows, the percentage of

the "working age" state population (18-64) will decline from 63.6 percent in 2000 to 57 percent in 2030.

Figure III.5. The "Dependency Ratio": 2000–2030

(US Census Bureau)



Different regions of North Carolina will have differential rates of growth, with urbanized areas in the Piedmont or near interstate highways and coastal and mountain counties growing faster than more rural counties. The NC State Demographer projects that several counties in eastern North Carolina will actually decline in population during this decade. Although it has one of the Nation's fastest growing populations, North Carolina remains one of the Nation's more rural states. Unlike states where most of the population is clustered in several large urban centers, North Carolina's population is spread across the State on farms and in small towns as well as in cities. This has implications for expanding access to higher education because educational offerings cannot be focused on a few urban areas but must be made available to citizens throughout the State.

B. Economic Trends

A changing state economy: North Carolina faces a critical challenge to revitalize its economic infrastructure by developing a well-educated workforce that can compete internationally in the modern knowledge economy. In 2001 North Carolina ranked eighth in the Nation in percent of manufacturing employment, and from 1997 to 2001 the State ranked sixth in the increase in hourly earnings for manufacturing production workers. The percentage of the working age population in the labor force (66.5 percent) is comparable to the national average.

In recent decades, progress such as this enabled the State to surpass the average per capita income of the Southeast region of the US A shift, however, has occurred in the State's economy away from a manufacturing and agricultural base to one that requires a workforce educated to participate in the more knowledge-intensive economic sectors such as finance, government, and information technology. North Carolina has made progress in moving into new economic activities such as biotechnology, information technology, and banking and finance, although it needs to make additional progress in these high tech, high wage industries.

North Carolina employment and income trends: North Carolina has been strong as a manufacturing state, but some of these industries have declined as a result of global changes in production and trade barriers. As the map in **Figure III.6** illustrates, economic changes

during the first half of this decade hit North Carolina particularly hard. Textile and furniture plant closings left a large number of North Carolinians unemployed or employed in lower paying jobs.

Figure III.6. Manufacturing Plant Closings: 2003 & 2004

(NC Employment Security Commission; map by UNCC Dept. of Geography & Earth Sciences from *NC Atlas Revisited*)

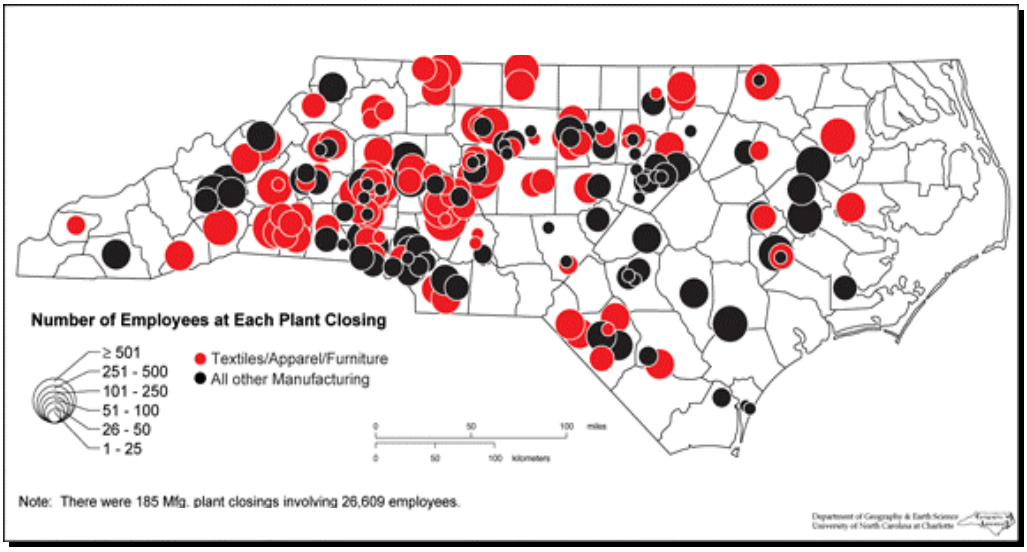


Figure III.7 shows the shifts in employment in various North Carolina employment sectors from 1997 to 2004.

Figure III.7. Employment Trends in Seven Economic Sectors: 1997–2004

(US Bureau of Labor Statistics; graph from *NC Atlas Revisited*)

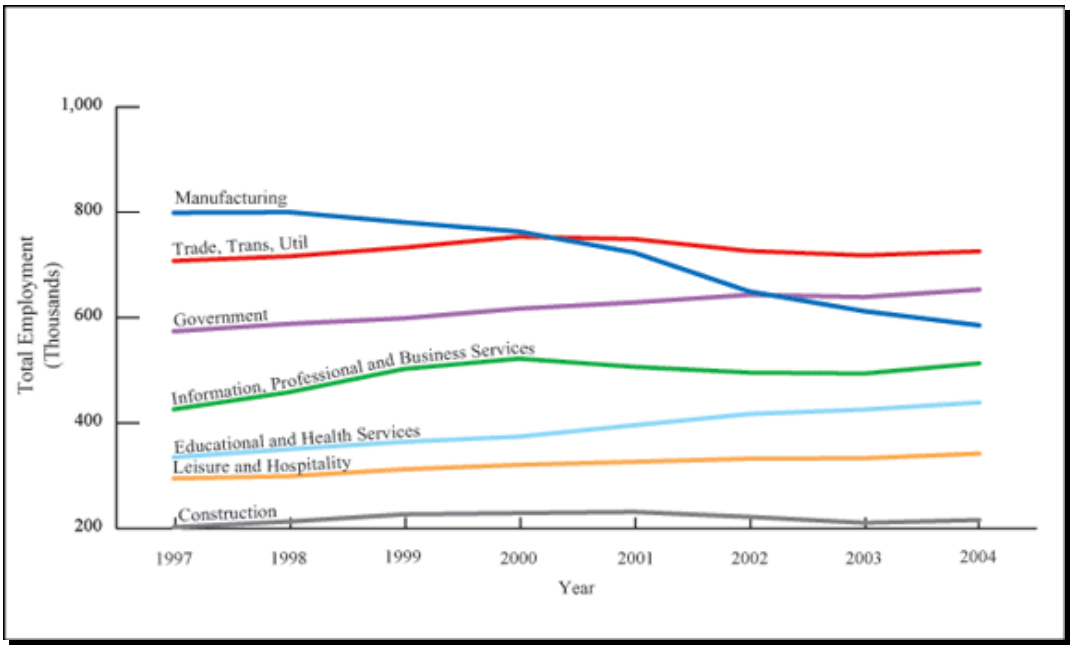
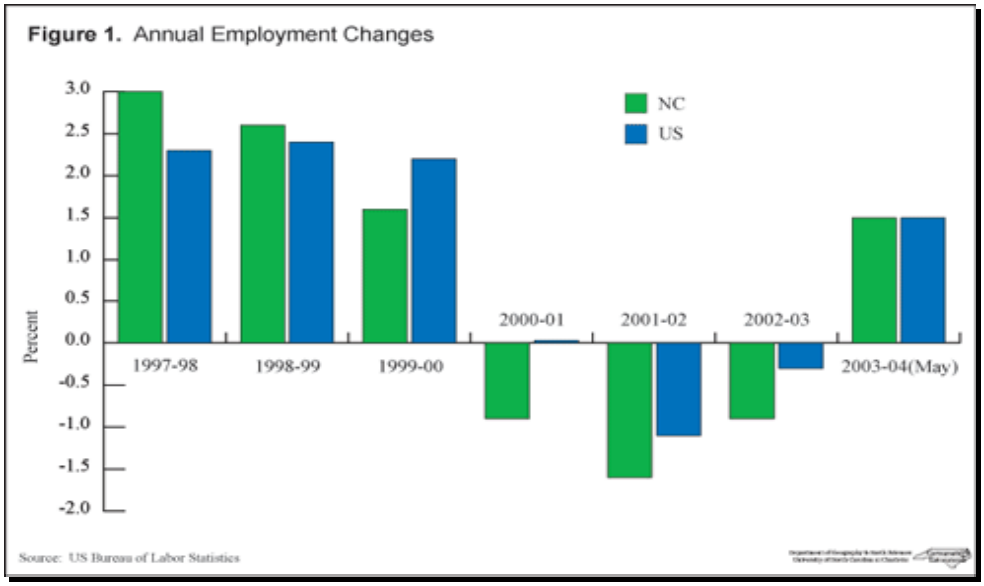


Figure III.8 shows that North Carolina's employment growth exceeded the national average but that employment losses also exceeded the national average during the first years of this decade. More recently the State's employment growth has again reached the national average.

Figure III.8. State and National Employment Changes: 1997-98 to 2003-04

(US Bureau of Labor Statistics; graph by UNCC Dept. of Geography & Earth Sciences from *NC Atlas Revisited*)



The impact of these economic shifts is shown in the slowed growth of North Carolina's gross state product (**Figure III.9**) and in the slowed growth of the State's per capita income (**Figure III.10**). As **Figure III.8** shows, North Carolina's gross state product growth (total value of all goods and services produced) exceeded both regional and national averages in the early part of this decade but fell behind in more recent years. This has had an impact on the State's average per capita income, which has fallen further below the national average in recent years (**Figure III.9**).

Figure III.9. Percent Growth in US, Southeast, and NC Gross State Product: 2001–2004

(US Bureau of Economic Analysis)

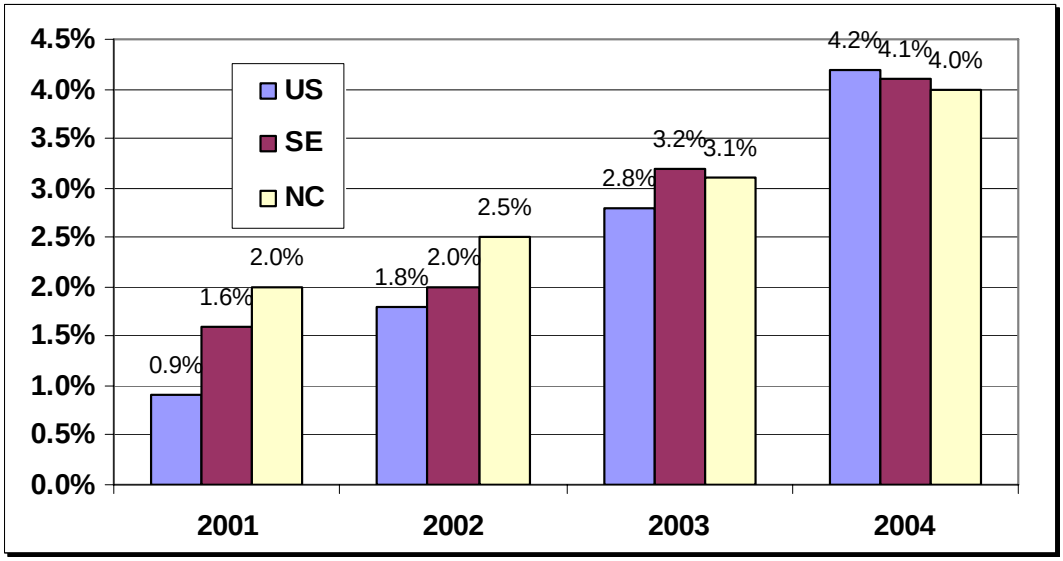
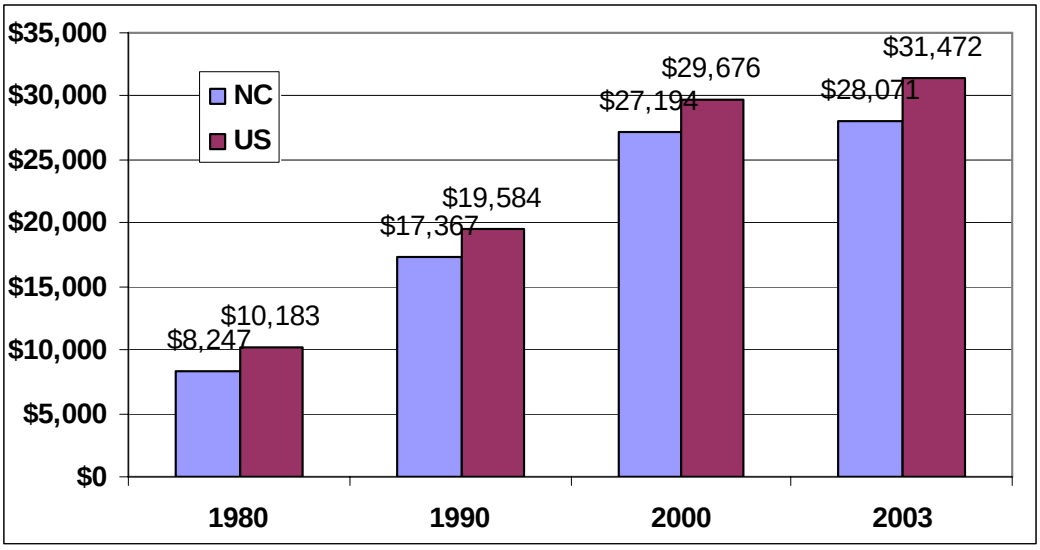


Figure III.10. NC and US Per Capita Income Average: 1980–2003

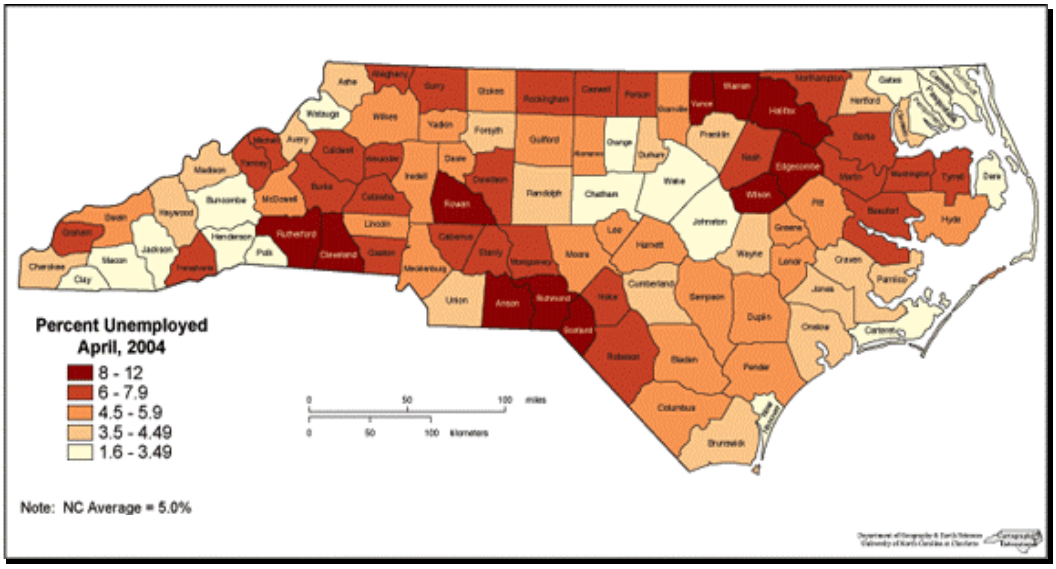


(US Bureau of Economic Analysis)

Changing economic conditions have affected various areas of the State differently. **Figure III.11** shows the differing levels of unemployment in North Carolina counties, which have been affected in part by the plant closings noted above.

Figure III.11. Unemployment Rates in North Carolina Counties: April 2004

(NC Employment Security Commission; graph by UNCC Dept. of Geography & Earth Sciences from *NC Atlas Revisited*)



North Carolina's industries: Industrial employment data from the Employment Security Commission of NC for the 1990-2004 period illustrate both recent declines in manufacturing but also the considerable diversification that has taken place in this sector of the economy. For example, the textiles, apparel and furniture industries lost a combined total of over 214,000 jobs during the period while all other manufacturing industries loss just 27,000 jobs. Increases were led by the chemicals, plastics/rubber, fabricated metals, and transportation equipment industries, which together added over 16,000 jobs. For the most part, these

industries paid average annual wages that were close to or in excess of the $37,443 average annual wage paid to all manufacturing employees in 2004.

The State's highest wage industry, computers and electronics products, the fourth largest industrial employer, recorded a 24 percent employment drop, but that rate was less than that for all industries. Diversification has had a substantial geographic component to it. For example, 1n 2002, 63 per cent of all jobs in chemicals were in the Raleigh-Durham, Charlotte-Gastonia and Greensboro/Winston-Salem/High Point areas and 79 percent of jobs in the computer and related electronics industry were found in these same three urban areas, led by Raleigh-Durham. Reflecting this, a national publication, "Business Facilities: The Location Advisor," ranked Raleigh-Durham fourth and Charlotte 11th highest among US high-tech cities in 2003. The following two tables present data compiled by the Duke University Markets and Management Studies Program:

Table III.1. 2003 Industry Value for Selected Industries in North Carolina

(US Census Bureau)

Industry	2003 NC Rank in US	Percent of Total US Value	Value in Billion Dollars	1997-2003 Growth
Biotechnology	2	12.3%	$18.0	35.7%
Banking/Finance	10	3.0%	$42.1	88.7%
Information Tech	16	2.0%	$22.6	-11.1%

Table III.2. Selected North Carolina Industries with National Rank in Employment, Average Wage, and Five-Year Wage and Employment Change: 2003

(US Bureau of Labor Statistics, US Census Bureau)

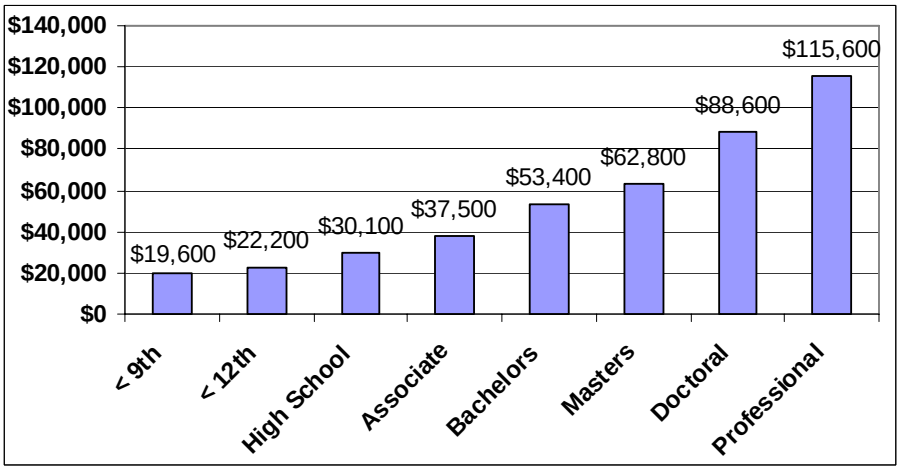
Industry & NC 2003 Employment Rank	*2003 Average NC Wage*	*NC Wage Change 1993-2003*	*NC Employment Change 1998-2003*
Tobacco (1)	*$54,903*	*12.2%*	*-17.8%*
Textiles/Apparel (2)	*$28,757*	*15.5%*	*-44.4%*
Furniture (2)	*$27,656*	*10.5%*	*-21.2%*
Biotechnology (6)	*$70,666*	*31.6%*	*18.3%*
Hog Farming (7)	*$26,265*	*4.2%*	*16.0%*
Banking/Finance (11)	*$61,854*	*54.7%*	*10.6%*
Information Tech. (14)	*$65,733*	*28.2%*	*-11.2%*

Military bases in North Carolina (Camp Lejeune Marine Corps Base & New River Air Station, Cherry Point Marine Corps Air Station, Fort Bragg Army Base & Pope Air Force Base, Seymour Johnson Air Force Base, and Coast Guard Air Station) and Department of Defense contracts also contribute substantially to the State's economy. A 2004 study by East Carolina University's Regional Development Services found that the contribution of all aspects of military spending exceeds six percent of the State's gross state product—$18 billion. These expenditures include military and civilian personnel payrolls, contractual expenditures, retiree and veteran benefits, and operations and capital expenditures by bases. Approximately 70 percent of that amount is contributed by NC's military bases through operations, associated purchases, and military and civilian payroll. UNC has greatly expanded its educational offerings at NC military bases in recent years and a number of initiatives are underway to coordinate UNC research expertise with Department of Defense priorities.

The higher education response: To enable North Carolina to achieve the greatest economic growth and prosperity possible for the workforce it has available, the State must capitalize on the benefits possible through higher education. **Figure III.12** shows the average earnings for individuals in the US according to their level of educational attainment.

Figure III.12. Average Annual Income of Adults 25 or Older in the US by Level of Educational Attainment: 2003

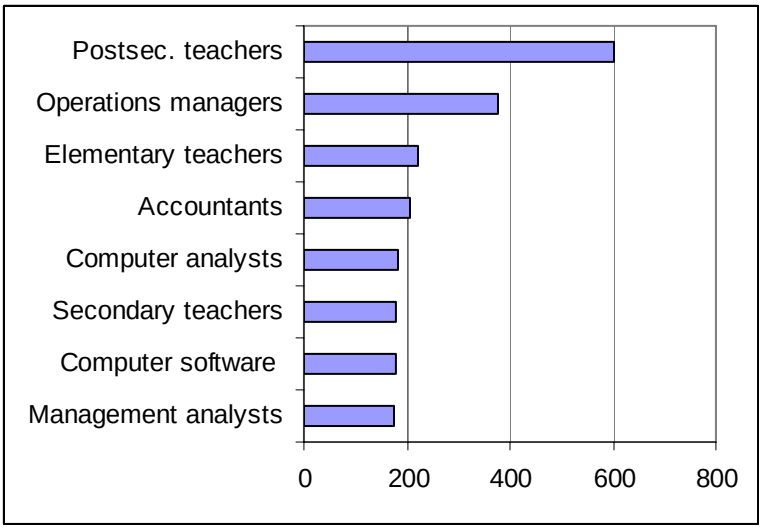
(US Census Bureau)



The US Bureau of Labor Statistics (BLS) reports that most high-paying occupations will require a college degree. Employment is projected by the BLS to increase in many of these occupations, with the occupations projected to have the highest growth presented in **Figure III.13**.

Figure III.13. High Growth Occupations Requiring a Bachelor's or Graduate Degree Projected 2002–2012 (thousands)

(US Bureau of Labor Statistics)



UNC institutions serve a vital role in helping to develop clusters of innovation and the well-educated workers needed to stimulate the economic growth of each region. UNC research and public service programs not only help to support university activities during this era of constrained state resources, but they also provide the impetus and expertise needed to foster

new initiatives in various regions of the State. The Golden Leaf Foundation grant for the Bioprocessing Training and Education Initiative is a recent example of this contribution to communities across the State. Another example of UNC's involvement in the State's economic revitalization and workforce development is the collaboration with Dole Foods to develop a biotechnology research and development campus on the site of the former Pillowtex plant in Kannapolis. The proposed facility would focus on nutrition and agricultural research.

C. Health and Well-being Issues

North Carolina faces substantial challenges on a number of indicators that relate to the well-being of the State's citizens. *Kids Count 2005*, an annual study funded by the Annie E. Casey Foundation, documents a variety of health and well-being indicators by state. **Table III.3** compares North Carolina data to national averages on a number of indicators of child well-being where the State needs to improve.

Table III.3. Indicators of Child Well-Being for NC and US: 1990 and 2004

(Annie E. Casey Foundation, 2005)

		Trend Data	
		1990	**2004**
Percent low birth-weight babies (2002)	**NC**	8.0%	9.0%
	US	7.0%	7.8%
Infant mortality rate (deaths per 1,000 live births, 2002)	**NC**	10.6	8.2
	US	9.2	7.0
Child death rate (deaths per 100,000 children ages 1-14, 2002)	**NC**	31	23
	US	31	21
Rate of teen deaths rate by accident, homicide, and suicide (deaths per 100,000 teens ages 15-19, 2002)	**NC**	71	75
	US	71	68
Teen birth rate (births per 1,000 females ages 15-17, 2002)	**NC**	45	29
	US	37	23
Percent of teens who are high school dropouts (ages 16-19)	**NC**	14%	9%
	US	10%	8%
Percent of teens not attending school and not working (ages 16-19)	**NC**	10%	10%
	US	10%	9%
Percent of children living with parents who do not have full-time, year-round employment	**NC**	27%	36%
	US	30%	33%
Percent of children in poverty (data reflect poverty in previous year)	**NC**	18%	22%
	US	20%	18%
Percent of families with children headed by a single parent	**NC**	23%	33%
	US	24%	30%

Geographic disparities in health and well-being: There are significant geographical as well as racial disparities in the poverty and health-related problems that face North Carolina's citizens. These differences must be considered as The University extends its educational offerings and services to all areas of the State. **Figure III.14**, **Figure III.15**, and **Figure III.16** illustrate the geographical disparities in poverty and health-related problems that must be addressed.

Figure III.14. Percent of North Carolina's Population Below the Poverty Level: 2000

(US Census Bureau, map by UNCC Dept. of Geography & Earth Sciences)

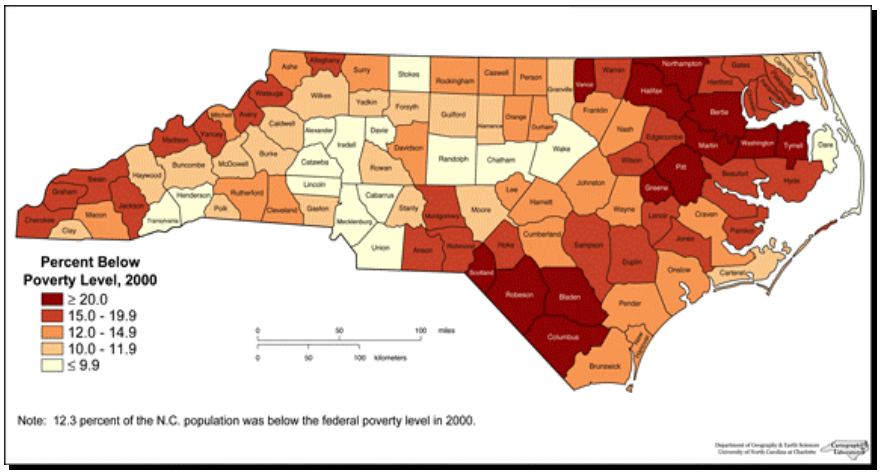


Figure III.15. North Carolina Death Rates from Cancer: 1997–2001

(NC Dept. of Health & Human Services, map by UNCC Dept. of Geography & Earth Sciences)

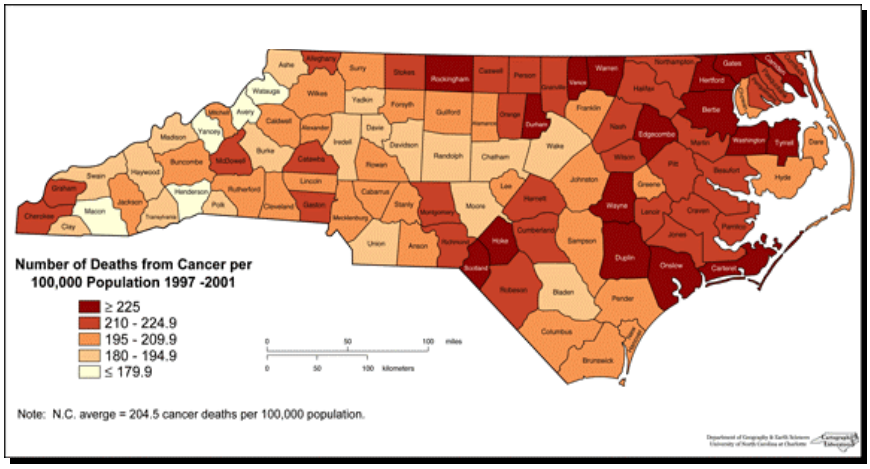
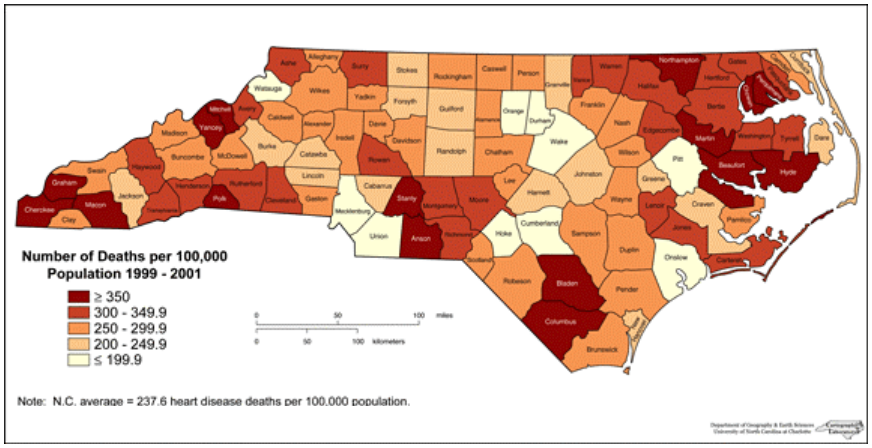


Figure III.16. North Carolina Death Rates from Heart Disease: 1999–2001

(NC Dept. of Health & Human Services, map by UNCC Dept. of Geography & Earth Sciences)



UNC institutions are engaged in a number of initiatives to produce the health care professionals needed to address North Carolina's health challenges. As one example, UNC representatives served on the Task Force on the North Carolina Nursing Workforce with other agency representatives to address the possibility of a nursing workforce shortage. In 2004 the Task Force produced a number of recommendations to be addressed by UNC and other educational institutions, the NC General Assembly, employers, and the nursing community.

State Education Trends

Student academic performance: While North Carolina's students in public K-12 grades have made impressive gains in academic achievement scores over the last decade, additional progress remains to be made. **Table III.4** provides the percentages of NC fourth and eight grades scoring at various achievement levels of the National Assessment of Educational Progress (NAEP) in reading, mathematics, science and writing. The State's mathematics performance held steady in 2005 and average scores at both grades four and eight were higher than the national average. North Carolina has made the greatest mathematics gains in the Nation since state NAEP testing began. North Carolina's reading scores at both grade levels have declined slightly in recent years.

Table III.4. Most Recent Results of North Carolina Student Performance on National Assessment of Educational Progress Scores

(National Center for Educational Statistics)

	Below Basic	***Basic***	***Proficient***	***Advanced***
Reading Grade 4 (2005)	*38%*	32%	23%	7%
Reading Grade 8 (2005)	31%	42%	25%	2%
Mathematics Grade 4 (2005)	17%	43%	33%	7%
Mathematics Grade 8 (2005)	28%	40%	25%	7%
Science Grade 4 (2000)	36%	40%	22%	2%
Science Grade 8 (2000)	44%	30%	23%	3%
Writing Grade 4 (2002)	12%	56%	28%	4%
Writing Grade 8 (2002)	13%	53%	31%	3%

Teacher shortages: North Carolina continues to face challenges in public education such as ensuring an adequate supply of qualified teachers in certain regions of the State and in high-need areas such as science, math, middle grades, and special education. This results in a heavier dependence on teachers from out of state and in many classrooms lacking a fully qualified teacher. High teacher turnover results in an unstable learning environment in which many new teachers to not have adequate guidance in their early years. Recent experience suggests that North Carolina needs 10,000 to 12,000 new teachers each year based on a number of factors. It is estimated that North Carolina will need more than 94,000 teachers in 2009-10 and more than 100,000 in 2014-15 compared to the approximately 90,000 employed in 2005-06.

To address this challenge, in 2004 UNC General Administration worked with campus education deans and chief academic officers to develop targets for graduates of teacher education programs resulting in a projected 60.4 percent increase of graduates by 2009-10 over the base year of 2002-03. A five-year plan was also developed to increase the number of lateral entry teachers by 69 percent over the 2002-03 base year by 2009-10. If the numbers of traditional graduates and alternative licensure completers are combined, UNC will be producing 5,908

potential teachers by 2009-10 and 7,208 by 2014-15. Specific targets were also agreed upon in the high need areas of math, science, middle grades, and exceptional children. UNC is currently working with the NC Community College System to develop articulation online teacher education programs in a number of high need areas.

Educational attainment: North Carolina continues to increase in the percentage of its citizens who have achieved degrees at the high school and college levels. It has surpassed the high school and college attainment percentages of states in the 16-state Southern Regional Education Board (SREB) region, but as **Figure III.17** and **Figure III.18 depict**, the State must still make progress. In recent years the State has lost ground in reaching the national average for education attainment for both high school and college.

Figure III.17. High School Attainment in North Carolina Compared to the National Average: 1970–2004

(US Census Bureau)

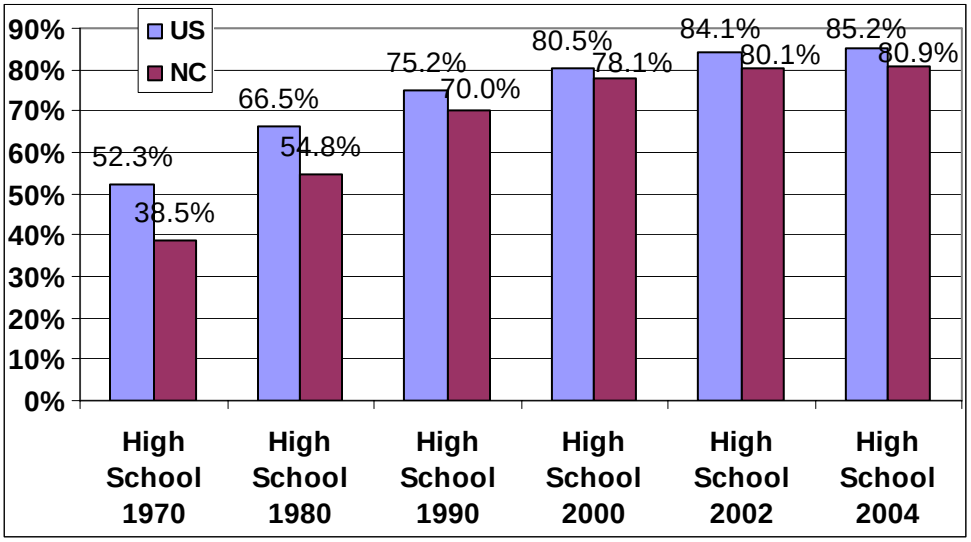
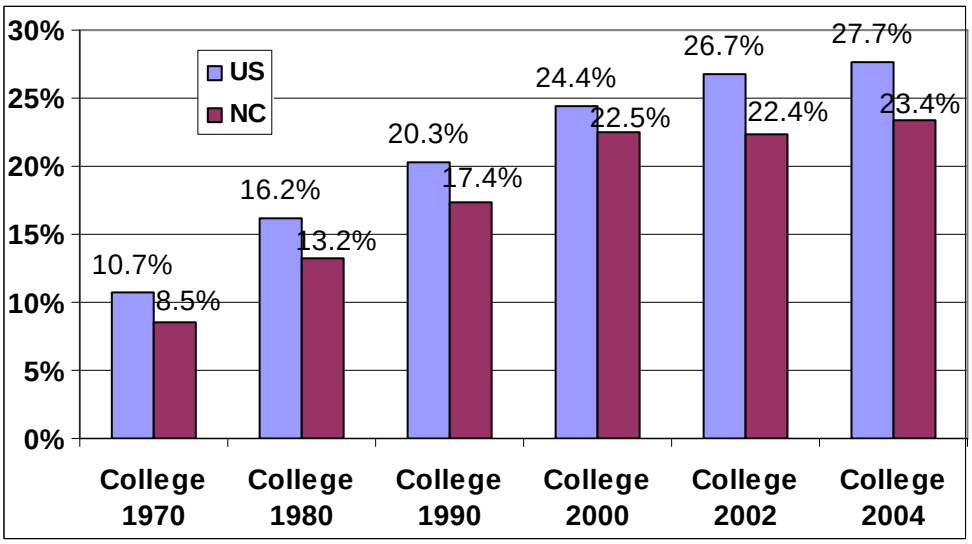


Figure III.18. College Attainment in North Carolina Compared to the National Average: 1970–2004

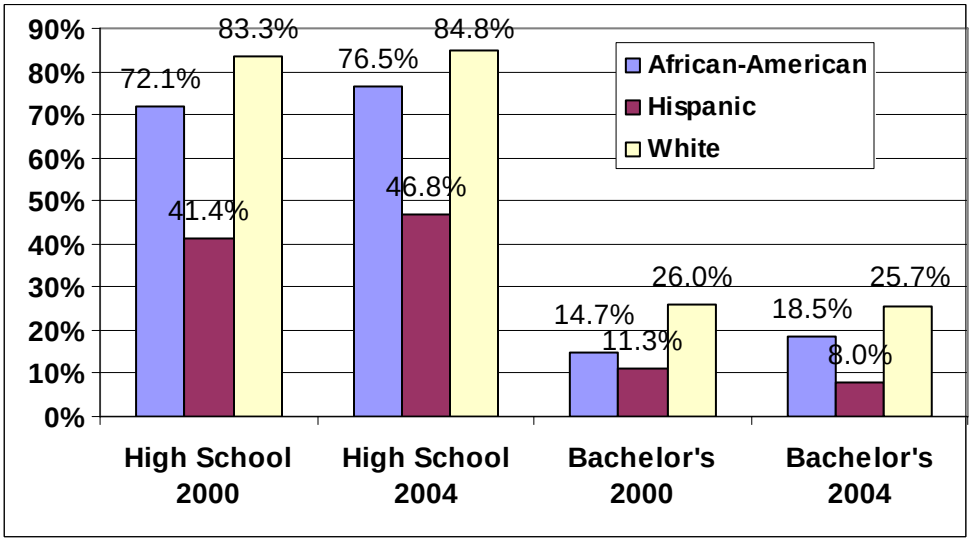
(US Census Bureau)



Additionally, as shown in **Figure III.19**, North Carolina must make progress in reducing the racial and ethnic disparity in educational attainment rates.

Figure III.19. North Carolina Educational Attainment by Racial/Ethnic Group: 2000–2004

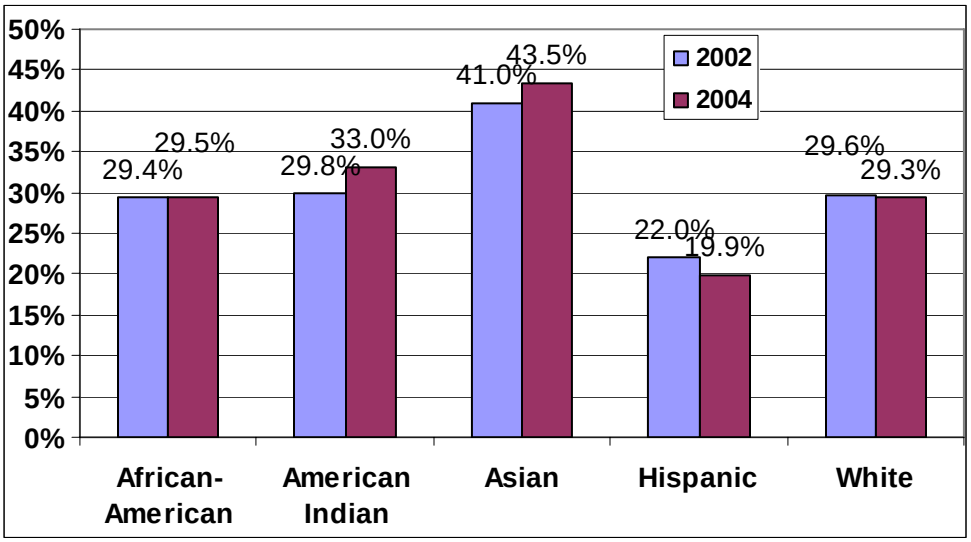
(US Census Bureau



More encouraging is the fact that by fall 2002 almost identical percentages of white, African American, and Native American recent high school graduates enrolled at UNC institutions (**Figure III.20)**. This suggests that over time, some educational attainment disparities in the State may be reduced or eliminated.

Figure III.20. Percent Enrollment of NC High School Graduates in UNC Institutions By Race and Ethnic Group: Fall 2002 and 2004

(UNC General Administration)

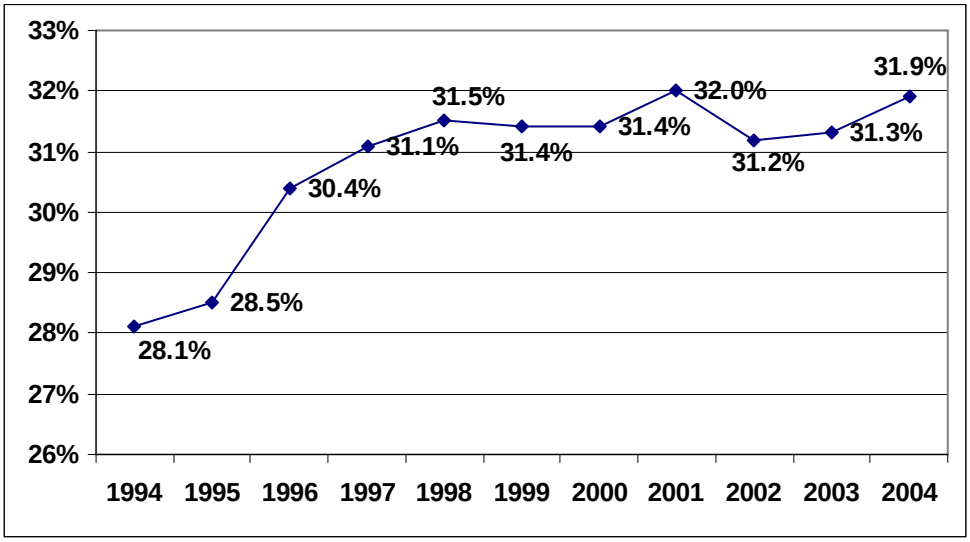


Increasing enrollments at UNC institutions: There are several reasons why enrollments at UNC institutions will continue to increase for the remainder of this decade. The annual college

going rate for all North Carolina high school graduates enrolling at UNC institutions has increased over the last decade from 28 percent to over 31 percent (**Figure III.21**).

Figure III.21. Annual Percentage of Recent North Carolina High School Graduates Enrolling in UNC Institutions: 1994–2004

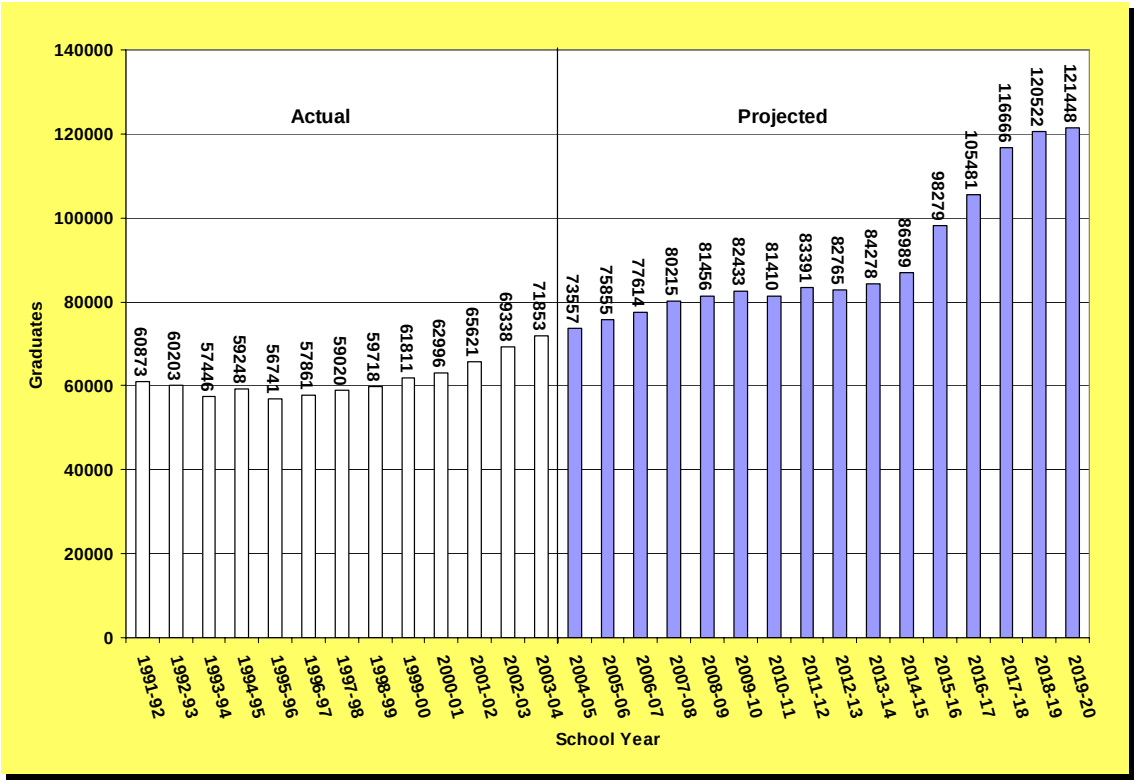
(UNC General Administration)



The number of NC high school graduates will continue to increase during this decade followed by a sharp increase during the latter years of the next decade (**Figure III.22**). UNC General Administration projects that many of these new students will be Hispanic.

Figure III.22. Projected North Carolina High School Graduates: 2005–2020

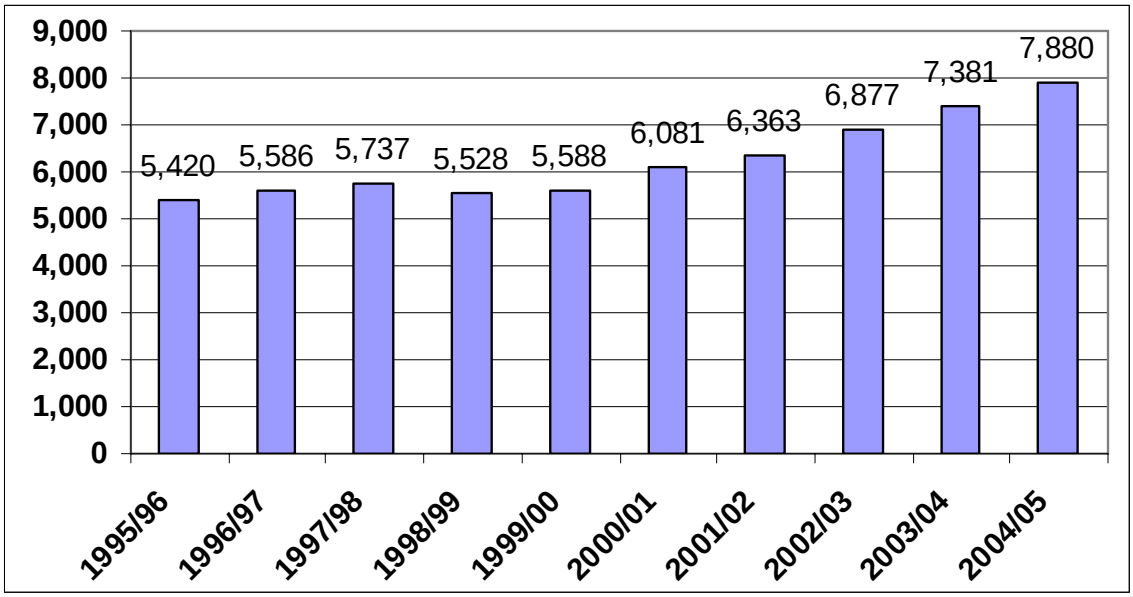
(UNC General Administration)



Another reason for anticipated ongoing growth in UNC enrollments is the success of the articulation agreement with North Carolina community colleges, which is bringing increased numbers of community college transfer students to UNC institutions (**Figure III.23**).

Figure III.23. NC Community College Transfers to UNC Institutions for Academic Years 1995-96 to 2004–05

(UNC General Administration)



Finally, UNC enrollments have increased in recent years and are likely to continue increasing due to distance education enrollments that have increased dramatically since 1998, when the NC General Assembly first funded UNC distance education. In the academic year 2004-05, distance education course offerings increased to over 4,000 and over 33,000 individuals took at least one distance education course. By fall 2005, UNC institutions were offering more than 80 online degree programs. These distance programs are reaching a non-traditional university population—over 78 percent of distance education degree-seeking students are age 26 or older, whereas only approximately 22 percent of on-campus students are in that older age range.

D. The University's Response to Demographic, Economic, Health and Well-being, and Education Trends

The primary challenge for the University during the remainder of this decade is to provide leadership in helping to ensure the prosperity and well-being of all individuals and regions of the State. This must be accomplished by increasing educational access and attainment and by partnering with other sectors to renew the State's economic base in an era of constrained fiscal resources. The University will increase access and educational attainment by continuing to emphasize higher education opportunities for diverse and low-income students through a variety of means. Special attention will be given to growing enrollments at focused growth institutions and to assuring affordability through appropriate tuition and fee rates and expansion of need-based financial aid. The University will continue to collaborate with the North Carolina Community College System to provide baccalaureate completion programs at UNC campuses, at community college campuses, and online.

The University will ensure the highest quality of educational preparation for the State's citizens by continuing to monitor carefully the State's educational needs—particularly in response to

the changing needs of the State's economy. Adequate and appropriate support for the University's faculty and libraries must be achieved in order to accomplish this goal. The University will continue to implement the facilities bond program in an efficient manner to accommodate its growing enrollments. A comprehensive educational response to the State's needs is required, and the University will continue to support K-12 education by working to expand the supply of well-qualified and diverse teachers and by providing high quality professional development for all teachers and administrators. The University will work with the NC Department of Public Instructions and local school systems to ensure that students are well prepared to progress to higher education.

The University will continue to pursue collaborative initiatives with industry, government, and other partners to stimulate economic development and creation of high quality jobs and work environments. UNC will make every effort to sustain its outstanding accomplishments in obtaining sponsored funding for public service, research, and technology transfer activities that are responsive to the State's needs. UNC recognizes the importance of the global economy to North Carolina's economic vitality, and expanded opportunities will be sought for student and faculty exchanges and for ways to expand the knowledge of the State's citizens about international issues. Foreign language instruction will be crucial for preparation of K-12 and university students to work effectively in an increasingly interconnected world. The University will continue to develop and implement information systems and applications that ensure an attentive stewardship of the State's resources. Many of the goals noted above can only be achieved through the effective and efficient use of information technology.