

University of North Carolina Tomorrow Commission
FINAL REPORT
Approved December 6, 2007

Executive Summary

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UNC TOMORROW COMMISSION REPORT OF PROCESS, FINDINGS, AND RECOMMENDATIONS

The mission of the University of North Carolina:

“The University of North Carolina is a public, multi-campus university dedicated to the service of North Carolina and its people . . . [Its] mission is to discover, create, transmit, and apply knowledge to address the needs of individuals and society. This mission is accomplished through instruction, which communicates the knowledge and values and imparts the skills necessary for individuals to lead responsible, productive, and personally satisfying lives; through research, scholarship, and creative activities, which advance knowledge and enhance the educational process; and through public service, which contributes to the solution of societal problems and enriches the quality of life in the State. . . Teaching and learning constitute the primary service that the university renders to society.¹”

“At pivotal points in our history this University has provided the toolkit with which the people of North Carolina built themselves out of poverty and mediocrity. By offering the raw material of innovation and the glue of common purpose, the University has shown how our aspirations can take concrete form.”

*UNC President Erskine Bowles
Inaugural Address, April 12, 2006*

Section 1. What was the purpose of this study?

The purpose of the University of North Carolina Tomorrow Initiative was to determine how the University of North Carolina can respond more directly and proactively to the 21st century challenges facing North Carolina both now and in the future through the efficient and effective fulfillment of its three-pronged mission of teaching, research and scholarship, and public service. The outcomes of this Initiative will guide and shape current and future priorities, resource allocations, existing and future programs, strategic plans, and missions of the University of North Carolina, its 17 constituent institutions and its affiliated entities to ensure that UNC² not only *becomes* more proactive and responsive to the needs of our state, but *remains* so in the years to come as the people of North Carolina continue to confront the myriad challenges of the rapidly changing, knowledge-based global economy and environment of the 21st century.

To become more responsive to the needs and challenges of our state, UNC first had to identify those needs and challenges. This was accomplished under the leadership of UNC Board of Governors Chairman Jim Phillips, UNC President Erskine Bowles, and the UNC Tomorrow Commission, a 28-member blue-ribbon group including business, education, government, and nonprofit leaders from across the state. They were charged with the responsibility of learning

¹ N.C.G.S. 116-1(b)

² “UNC,” as used in this report, refers to the University of North Carolina, its 17 constituent institutions, and its affiliated entities established under Chapter 116 of the North Carolina General Statutes.

what the people of North Carolina need from their University and making relevant recommendations to the UNC Board of Governors. The Commission's work was guided by the expert research, analysis, and advice of the UNC Tomorrow Scholars Council, a diverse 14-member panel of faculty from across the UNC system engaged to serve as advisors to Chairman Phillips, President Bowles, and the Commission.

The UNC Tomorrow Commission and Scholars Council recommend to the UNC Board of Governors that UNC respond to the needs and challenges facing North Carolina as identified in this report.

Section 2: How did we collect the data?

To identify the major challenges facing North Carolina, the Commission developed a diverse array of input from *internal and external* constituencies across our state, framed with considerable research and analysis by the Scholars Council. We received comments, suggestions, and responses from more than 10,000 individuals.³ This input was fully considered by the Commission and forms the basis for the recommendations and suggested strategies contained in this report.

2.1. Internal Constituencies Input

2.1.1. Campus Visits – Early in the UNC Tomorrow Initiative, President Bowles, members of the General Administration Council, and the UNC Tomorrow staff visited all 17 constituent institutions to learn from students, faculty, staff, and administrators what current campus activities are already directed at meeting the needs of their region and the state, and to identify both barriers to and opportunities for increased public engagement. Reports from each campus visit were prepared and made available to the Commission, Scholars Council, campuses, and public (via the UNC Tomorrow website at www.nctomorrow.org), and are listed in Appendix [A].

2.1.2. Faculty Input – During October and November 2007, President Bowles, members of the Scholars Council, members of the General Administration Council, and UNC Tomorrow staff conducted forums with the faculty of all 17 constituent institutions to listen to their concerns and suggestions regarding the major challenges facing their campuses, their regions, and our state as a whole. Staff representatives and students also participated in these forums. In all, approximately 1,000 faculty, administrators, staff, and students attended. Reports from each forum were prepared, and an executive summary of the input received from the faculty was made available to the Commission, the Scholars Council, campuses, and the public (see Appendix [B]).

Faculty input was also sought and received through meetings with faculty leadership, individual emails from faculty, and faculty participation at the Community Listening Forums (described below).

2.1.3. Student Input – UNC Tomorrow utilized 21st-century tools to seek the input of 21st-century students. Through a public blog, students offered their perspectives and concerns about their future and their education. For a summary of blog entries, which includes those of members of the public as well as students, see Appendix [C].

Student input was also sought through meetings and discussions with student leaders and presentations by UNC Tomorrow staff at meetings of the Association of Student Governments and other student organizations. Students also participated in the campus visits, the Community Listening Forums (described below) and some Faculty Forums.

³ This figure includes approximately 2,700 attendees at 11 Community Listening Forums, 6,700 survey respondents, 1,000 attendees at 11 Faculty Forums involving all 17 constituent UNC institutions, blog participants, and individually submitted comments delivered by mail and email.

2.1.4. Additional Internal Input – Other important internal constituencies provided input on the challenges and opportunities facing their campuses and regions. These constituencies include campus human resource directors, career counselors, chief academic officers, chief financial officers, department heads and other campus administrators, and staff representatives. In addition, many of these constituencies participated in the Community Listening Forums (described below) and in some Faculty Forums. The input from these constituencies was incorporated into the development of the recommendations contained in this report.

Finally, members of the UNC General Administration Council provided information, observations, and suggestions throughout the Commission’s work and were instrumental in the development of this report.

2.2. Scholars Council Research and Analysis

2.2.1. Trends and Issues Briefs - During the initial phase of the UNC Tomorrow Initiative, the Scholars Council prepared a series of research briefs that identified major trends and issues impacting North Carolina and UNC, and offered suggestions on potential UNC responses to these trends. Each report includes data and information on notable trends, resulting implications for North Carolina (external impact), and resulting implications for the University (internal impact and opportunities). The Scholars Council reports also addressed the issues that face our state, including economics and workforce readiness, global preparedness, demographic shifts, energy and environmental conservation, health and wellness, public education, regional differences within our state, social issues, and trends in higher education. The Scholars Council briefs and a summary of their suggested responses are listed in Appendix [D].

A video highlighting the major trends identified by the Scholars Council was produced by RedWire Video Productions (Tyler Helikson and Dave Gragnolati), a company formed by a recent NCSU graduate and current student, with the assistance of Bobby Dobbs at UNC-TV. “Student-produced and scholar-driven,” the UNC Tomorrow video contains data and statistics that underscore the challenges facing North Carolina in areas ranging from economics and global competitiveness to health and environment to public education. The video served as an effective tool in educating audiences on these challenges and stimulating discussion about potential UNC responses.

2.2.2. Analysis of external/public input – A significant amount of input was received from external constituencies through a series of Community Listening Forums and a survey (see description of External Constituencies Input below). The members of the Scholars Council participated in all Community Listening Forums, and at the conclusion of the forums and survey response period, analyzed the input received from the public and identified the major concerns offered by the public to which UNC should respond.

2.3 External Constituencies Input

To best identify what the people of North Carolina need from *their* public university, the UNC

Tomorrow Initiative sought broad input from the public through two primary mechanisms: Community Listening Forums and a public survey. The Commission also received valuable input from the Institute for Emerging Issues' Business Committee on Higher Education.

2.3.1 Community Listening Forums – During September and October 2007, the UNC Tomorrow Commission hosted a series of 11 Community Listening Forums across the state in urban and rural areas covering each of the state's major geographic and economic regions. Chairman Phillips, President Bowles, members of the Commission, the Scholars Council, members of the General Administration Council, and UNC Tomorrow staff traveled the state listening to the concerns and suggestions of the people of North Carolina. The Forums were held in:

Greenville	Rocky Mount	Fayetteville
Wilmington	Elizabeth City	Charlotte
Hickory	Asheville	Sylva
Research Triangle Region (Raleigh)		Triad Region (Greensboro)

Approximately 2,700 people attended the Forums and offered a wide range of perspectives on issues facing their communities and regions. The Forums, each three hours in length, were structured to invite full participation by the attendees, incorporating an "open-mike" period and small group discussions, which were facilitated by members of the Scholars Council and staff from the Small Business and Technology Development Center (SBTDC). The Forums opened with brief comments by Chairman Phillips followed by a short video highlighting major issues facing our state, produced from research by the Scholars Council. Comments from the public were initially offered by five or six community leaders, after which all attendees participated in half-hour small group discussions, and were then invited to offer comments and suggestions during the "open-mike" session. President Bowles then ended each Forum with a summary of the public's major issues, needs and suggestions. With the exception of brief opening and closing remarks, the forums were entirely devoted to listening to comments offered by the public. Attendees were also given the opportunity to complete the UNC Tomorrow survey.

All Forums were video and audio recorded, and audio recordings of each forum were posted on the UNC Tomorrow website. A video compilation of forum speakers was produced to highlight the major themes expressed.⁴ For summaries of the Community Listening Forums and an executive summary of the major concerns, including an analysis by the Scholars Council, see Appendix [E].

2.3.2. UNC Tomorrow Survey – An informal survey⁵ was developed to provide additional opportunity for public input on the major issues facing their communities and regions and potential UNC responses to these challenges. Delivered primarily online

⁴ Video and audio recordings were done by Tyler Helikson and Bobby Dobbs. The forum highlight video was produced by RedWire Video Productions.

⁵ The UNC Tomorrow Survey was not administered in a manner intended to achieve a representative sample of the whole population, but instead served as an additional mechanism for receiving public comment; survey results are informal and not intended to be statistically valid representations of the views of all North Carolinians.

(and also at the Community Listening Forums), the survey generated 6,739 responses. The survey was administered and compiled by the SBTDC. For a summary of the major findings from the survey and the survey results, see Appendix [F].

2.3.3. Institute for Emerging Issues' Business Committee on Higher Education – In response to the IEI's 2007 Emerging Issues Forum on Transforming Higher Education, the IEI formed the Business Committee on Higher Education (BCHE). Charged with identifying and conveying to higher education the needs of our state's business leaders, the 24-member committee, under the leadership of co-chairs Bob Ingram and Ann Goodnight, developed five key recommendations for how higher education in North Carolina could better respond to the rapidly changing needs of both business and our society. Ann Goodnight presented the BCHE's recommendations to the UNC Tomorrow Commission, and these recommendations have been incorporated into those contained in this report. For a copy of the BCHE's report and recommendations, see Appendix [G].

2.4. UNC Tomorrow Commission Deliberations

In addition to participating in the 11 Community Listening Forums, the UNC Tomorrow Commission met four times to deliberate on and identify the major challenges facing North Carolina. In addition to considering the internal and external input identified above, the Commission also drew upon the diverse and considerable experience and perspectives of its own members. The Commission thoroughly discussed the input received from external and internal constituencies and the research conducted by the Scholars Council, and with the expert advice of the Scholars Council, identified the major challenges facing North Carolina to which UNC should respond.

2.5 Additional Communication Efforts

In an effort to invite as much input from the public as possible, multiple communication mechanisms were employed. UNC Tomorrow hosted a blog through which participants could comment on issues and offer perspectives and suggestions. Through the UNC Tomorrow listserv, individuals who chose to sign up received updates on the progress of the Initiative and reminders of ways they could participate in the process. UNC Tomorrow staff also made a number of presentations about the Initiative to a wide variety of community and statewide organizations, and during each presentation invited comments and observations from attendees. Finally, media coverage of the Initiative included news reports and editorials, op-ed pieces submitted by members of the Scholars Council, and interviews conducted with Chairman Phillips, President Bowles, Commission members, and others.

Section 3: What did we hear from the public?

The extraordinary response from the public at the Community Listening Forums and through the survey can be attributed to a variety of factors. Of course, the efforts of campuses, SBTDC, alumni groups, professional associations, and other entities in advertising the forums and the survey were instrumental in achieving such remarkable response. However, the high response level ultimately must be attributed to two factors embodied in the people of North Carolina themselves: first, the people of our state are keenly aware of the issues and challenges facing their families, their communities, and their regions, and they care deeply about those challenges. Second, the people of our state have faith in UNC's ability to help address these challenges and are looking to UNC for leadership to transform these challenges into opportunities.

Dr. Tom Ricketts, a member of the Scholars Council, eloquently summarized what was heard from the people of North Carolina in his remarks to the UNC Tomorrow Commission on November 7, 2007.

“...The President and this Commission invited people to tell us what they wanted from the University of North Carolina and the people responded vigorously – and with a clear trust that we would listen to them and, more importantly, hear them.

They trusted us enough that they spoke from their hearts as they described the kinds of things that they feared the most; they told us of the dreams that they had for themselves, their families, and their communities. And they had the courage to tell us how they wanted to see the UNC of the future work – and how it *should* make a difference in their lives. Anyone who went to these sessions could feel the deep trust North Carolinians feel toward this University and its campuses as they spoke of their problems, their hopes and the vision they saw for their communities and the state.

I think the message they sent to us can be summarized in a few words: *frustration*, *expectation*, *imagination* and *inspiration*, and finally, *creation*.

People young and old, rich and poor, came to talk about their *frustrations*. They were frustrated at the continuing material poverty of their neighbors or their family members who had lost their jobs or were at risk of becoming unemployed. They were frustrated at the cultural poverty of some of their communities, and they wanted to see the University reach into their towns. They were frustrated at the alienation of young people who couldn't recognize the value of education or even benefit from the schools they were already in. They were frustrated that they couldn't readily access quality medical care because there weren't enough doctors, dentists or nurses. They were frustrated by a reluctance of their neighbors to take risks and to lead where there were opportunities or their inability to get the skills to lead themselves. The people spoke eloquently of their frustrations with what they saw as the future of their state.

They came to the forums with a belief that talking about this frustration could help change things. They came with a sense of *expectation* that we, the University of North Carolina and its campuses, could change the future. Their trust has led to a set of

expectations that we can lead and help make a better future. They have the *expectation* that the University has the *imagination* to find the solution to the problems they see and share. They have the *expectation* that we have the *inspiration* to do what is needed to deal with the big problems of life. They feel we have the ability to turn *imagination and inspiration* into *creation* to solve all these problems.

The people of North Carolina are very aware of the challenges that we all confront. They are concerned about the *big* problems of life and society, and they look to us to cope with those *big problems*.

- *Big problems* like educating our children better. They want us to help fix the public schools by training better teachers, developing education leaders, linking the University with their schools, and drawing on our intellectual and material resources to effect real change.
- *Big problems* like making a strong economy and creating jobs. They want us to invent new ways of doing things, create new products, master new skills that are in demand, and teach those skills to everyone who wants them.
- *Big problems* like improving the quality of life. They want us to create the intellectual and artistic climate that makes for a full, meaningful life. They want to make sure that the air is clean and water is available, and they want to make sure that the natural beauty of North Carolina is something their children and grandchildren can enjoy.
- *Big problems* like global competition. They know that what happens in China today is important for them tomorrow; they know our future is tied to a world that is close to even the smallest towns.

They expect us to deal with the big problems, to have the *imagination* to take on the big problems and to *create* solutions.

The people of North Carolina came to us with specific ideas. They want more access to the University, either branch campuses or outreach programs or just a fair shake in getting onto the campuses, and that access has to be affordable. They want access to advancement via master's degrees that are offered where they live. They want to solve the problem of training the leaders of tomorrow by taking advantage of what we have to offer, but they ask that we recognize the realities of life as it's lived today in their communities with the pressure of having to work and learn at the same time.

They want us to teach the skills that are in demand: engineering, nursing, entrepreneurship, and skills for sustainable environments. They want those college level skills for entry into the workplace, as well as the skills for the next step up so that they can teach those skills to the next generation.

These people who have trusted us with their fears and frustration have also blessed us with their ideas and their vision for the future. These people who are our customers are speaking loudly and expecting a lot. They are asking for service, the service of the University to solve the big problems they recognize, but no one asked us to lower our standards. In fact, they want us to *raise* our standards because they are asking for performance from our *teaching*, our *research*, and our *service*. In short, they are asking us to improve our game.

We are duly challenged by the customers, and our customers know our business. They want to see change in our curricula and how we teach. They want to see us reward results in the way we hire and promote faculty. They want us to communicate with them and their communities and to teach our students how to communicate. They want us to build buildings that last, are useful and used, and which don't hurt the environment. They want us to study the future by shaping it.

We, the University of North Carolina, need to make sure that the *imagination* we have to *create* solutions is not buried in the *American Journal of Academic Disciplinary Discussion*, but in the *American Journal of Making Things Happen*. The most important place for us to have our work appear is in that special place that grants tenure to all of us, in the hearts and minds of all the people – the *American Archives of Life*. We need to keep working on the things that will find a place in the *American Journal of Getting Things Done*. I think our universities are ready and up to the task. Let's start.”

Section 4: What are our major findings?

In the following section, we offer our major findings, recommendations, and suggested strategies as compiled from the various sources of input discussed above. Our major findings are clustered in seven categories:

- 4.1 Our Global Readiness
- 4.2 Our Citizens and Their Future: Access to Higher Education
- 4.3 Our Children and Their Future: Improving Public Education
- 4.4 Our Communities and Their Economic Transformation
- 4.5 Our Health
- 4.6 Our Environment
- 4.7 Our Universities' Outreach and Engagement

The following construct for the findings of the Commission is best framed by the analysis of Dr. Jim Johnson, a member of the Scholars Council. Historically, public investments in either “people-based” or “place-based” strategies have dominated our country’s efforts to bring about transformative change ranging from social (the civil rights movement) to educational (the GI Bill) to economic. At various points in our nation’s history, public investments in *both* “people-based” and “place-based” strategies have been pursued simultaneously.

Our review and evaluation of the information gathered over the past six months via the research of our Scholars, listening to the public and our own faculty, online surveys, and dialogue among ourselves, suggest that the people of North Carolina are asking UNC to simultaneously invest in both “place-based” and “people-based” strategies that will enhance North Carolina’s globally competitive position; that is, its attractiveness as a place to live and do business in the years ahead.

Against this backdrop, to effectively communicate what we found through our research and what we heard from the people of North Carolina, the UNC Tomorrow Commission must answer three essential questions:

1. How can UNC assist in making the state, the various regions of the state, and local communities more globally competitive?
2. How can UNC make the residents of North Carolina more competitive as private sector employees, civil servants, entrepreneurs, business owners, community leaders, and citizens at-large in the knowledge-intensive and speed-driven economy of the 21st century?
3. What changes are needed internally within the UNC system to ensure that its 17 constituent institutions and its affiliated entities are able to mobilize and refocus the requisite resources to help North Carolina, its citizens, and its communities become more globally competitive?

Answers to these questions should provide a strategic roadmap regarding how UNC, if properly re-positioned to be more engaged in solving pressing societal problems, can leverage its substantial intellectual capital to help the state, the various regions of the state, and local communities (place-based strategies), as well as all North Carolinians (people-based strategies), thrive and prosper in the highly volatile global environment of the 21st century.

The following sections contain the UNC Tomorrow Commission’s recommendations. Each recommendation is followed by a list of suggested strategies, which are offered for consideration as potential options for achieving that recommendation.

4.1 Our Global Readiness

Major Finding: UNC should educate its students to be personally and professionally successful in the 21st century and, to do so, should enhance the global competitiveness of its institutions and their graduates.

Educating students to succeed both professionally and personally in today’s rapidly changing, knowledge-based global economy is critical to our state’s future. North Carolina no longer competes just with states in our own country, but with countries around the world. It is imperative that UNC educate students that possess the unique combination of “hard skills,” “soft skills,” and innovative ability. Equally important, UNC must strengthen the global competitiveness of its own institutions so that they can remain on the cutting edge of innovation, discovery, and learning.

Shortage of College Skills Among Workforce. If North Carolina is to succeed in the global economic and knowledge race, forecasts indicate more and better education will have to be provided to more people. By 2020, the shortage of workers with college-level skills in the U.S. will increase to more than 14 million.⁶ To fill the demands for more educated workers in our state, the North Carolina Commission on Workforce Development estimates the state will have to produce *annually* 15,000 more workers with at least a bachelor’s degree and 19,000 more workers with a two-year degree than it is currently. While about 33% of North Carolina’s college-age students are enrolled in college, this rate is only 69% of that in South Korea, and is also lower than the rates in Greece, Finland, Ireland, and Poland.⁷ Moreover, these graduates must possess the “hard skills” that are relevant to the global economy and to dynamic business needs, such as expertise in science, mathematics, and technology.⁸ However, in the U.S. only about 16 % of undergraduate degrees are awarded in the “STEM” fields (science, technology, engineering, and math), while in China more than 50% of undergraduate degrees are in these fields.⁹

⁶ Economic Development America, 2006.

⁷ The National Center for Public Policy and Higher Education (2006). The State Report Card on Higher Education in North Carolina.

⁸ The Institute for Emerging Issues, 2007, *Transforming Higher Education: A Competitive Advantage for North Carolina*, A Report from the Institute for Emerging Issues.

⁹ Kuenzi, Mathews, and Morgan (2006). Science, Technology, Engineering, and Math (STEM) Education Issues and Legislative Options. CRS Report to Congress, May 2006.

Shortage of “Soft Skills.” Additionally, today’s college graduates need to develop “soft skills” – those capabilities including the ability to think critically, reason analytically, solve problems, communicate clearly both orally and in writing, work in teams, and be comfortable within a diverse workforce.¹⁰ These skills, which are critical to lifelong learning and professional growth, have become a necessity as economic sectors, occupations, and job characteristics continue to change more rapidly today than in the past. In many instances, it is proficiency with the soft skills, along with the ability to think innovatively and creatively, that will carry students from one job or career to another. The technical skills required of students are changing so rapidly that we are preparing students today to work in jobs that do not yet exist, with technologies that have not yet been invented, to solve problems that are still unknown. What will not change, however, is the need for the critical soft skills mentioned above. In fact, when the Institute for Emerging Issues’ Business Committee on Higher Education surveyed North Carolina business leaders in 2007, 50% of the respondents indicated that the specific technical work skills required by their companies’ employees will change significantly within the next two to five years.

Members of the public who spoke at the UNC Tomorrow Community Listening Forums repeatedly encouraged UNC to better prepare students for today’s workplace, emphasizing the need for soft skills development, such as oral and written communication and increased global awareness. Respondents to the UNC Tomorrow survey also identified knowledge and skills they consider important in today’s globally competitive workplace.

Table 1: Critical Knowledge and Skills for Global Competitiveness

Knowledge and Skills	Average Rating (on scale of 1-10)
Honesty and integrity	9.37
Professionalism and work ethic	8.70
Critical thinking and reasoning	8.57
Ability to use technology	8.50
Written communication	8.43
Innovative thinking and creativity	8.30
Teamwork	7.99
Gathering and organizing information	7.98
Cultural awareness and understanding	7.04
Knowledge of a foreign language	6.09

If we accept the problems of the lack of soft skills in college graduates and new hires in the public and private sectors, and couple that with the explosion of college applications from immigrant populations and international students, we are faced with a crisis in communication instruction beginning at the elementary level, through high school and college, and continuing into the workplace. This crisis has direct economic consequences:

- The writing weaknesses of incoming college students cost American campuses up to \$1 billion annually.¹¹
- Training professionals to write more effectively may cost American firms as much as

¹⁰ September 2004, Report of the National Commission on Writing: *A Ticket to Work or a Ticket Out – A Survey of Business Leaders*.

¹¹ Report of the National Commission on Writing: *The Neglected “R”: The Need for a Writing Revolution and Writing and School Reform* (April 2003).

\$3.1 billion annually.¹²

- The writing deficiencies of state government employees across the country cost taxpayers nearly a quarter of a billion dollars annually (based on an average cost of \$400 per employee for eight hours of training).¹³

In addition to these findings about writing, literacy levels (reading abilities) also are critical factors in job and life success. According to the 2005 *Literacy in Everyday Life: Results From the 2003 National Assessment of Adult Literacy* conducted by the U.S. Department of Education, adults with higher literacy levels are more likely to be employed full time and less likely to be out of the labor force than adults with lower literacy levels. Those with lower literacy skills also earn lower incomes and are more likely to be employed in service occupations. Women with higher levels of literacy are less likely to have received public assistance than women with low levels of literacy. If they received public assistance, they did so for a shorter amount of time than women with lower literacy levels.

Consequences of the Lack of Literacy and “Soft Skills.” Without change, we will continue to create a workforce in our state that is ill-prepared for the non-technical aspects of employment and life. North Carolina businesses will continue to pour millions of dollars into training our graduates – dollars that could have been put to other productive uses. The University has a responsibility to graduate students who are prepared for the challenges of life and work.

To keep pace with these global demands, higher education must adapt and improve its curriculum and teaching methodologies. Ninety percent of employers think colleges and universities need to improve the quality of student achievement to ensure America’s global competitiveness.¹⁴ While IEI BCHE survey respondents rated the overall preparation of graduates from our state’s community colleges and UNC as at or above average, 55% noted that improvement is needed in basic soft skills, reading comprehension, and math.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

4.1.1. UNC should prepare its students for successful professional and personal lives in the 21st century, equipping them with the tools they will need to adapt to the ever-changing world.

Suggested Strategies:

- Improve student proficiency in “soft skills” including oral and written communication, critical thinking and analytical reasoning, problem solving, creativity and innovation, teamwork and collaboration, work ethic and professionalism, financial literacy, information literacy, and digital literacy.
- Improve student proficiency in 21st-century knowledge emphasizing science, technology, engineering, and math (STEM).

¹² Report of the National Commission on Writing: *A Ticket to Work or a Ticket Out – A Survey of Business Leaders survey responses*, (September 2005).

¹³ Report of The National Commission on Writing: *A Powerful Message from State Government* (July 2005).

¹⁴ Peter D. Hart Research Associates, Inc., 2006.

- Create a statewide task force that partners with business, nonprofit organizations, and faculty to develop a strategic plan for integrating the soft skills throughout the curricula from general education through majors and graduate (master's) programs by:
 - Identifying existing successful UNC centers and programs to serve as models of areas of soft skills development throughout UNC (example: UNC Charlotte's Center for Applied and Professional Ethics).
 - Creating a statewide council of faculty and writing directors from across UNC to identify successful strategies for writing and literacy programs and to work with appropriate faculty to improve campus programs and enhance students' writing and literacy competencies.
 - Developing ways that business can strengthen its role in providing resources (people and dollars) to assist universities in preparing students to enter the workforce.
- Recognize and reward the role of the humanities and arts education in developing soft skills by strengthening the commitment of resources to the liberal arts.
- Increase emphasis on entrepreneurial thinking and learning skills for UNC students to equip them to adapt to the rapidly changing economy.
- Provide appropriate faculty development opportunities and support to encourage faculty to use pedagogical methods that have been proven to be more effective with the changing student population (active learning, collaborative teams, problem-based learning, client-based projects, etc.).
- Incorporate experiential learning opportunities across degree programs and throughout curricula through such activities as internships, "job-shadowing," undergraduate research, community and service projects, project-based and active learning, work-study programs, study abroad, and business mentors.
- Promote and reward civic engagement, leadership, and community service among students, faculty, and staff.
- Develop tools that assess and verify students' understanding, application, and mastery of 21st-century life skills needed in every professional endeavor.
- Maximize resources of career centers on campuses and integrate career counseling with academic advising.

4.1.2. UNC programs, especially research programs, should be globally competitive to ensure that they are globally relevant and significant.

Suggested Strategies:

- Maintain and strengthen the quality and high standards of academic curricula, research, and scholarship activities to world standards of excellence.
- Continue to expand basic and applied research activities consistent with the priorities and missions of UNC campuses.
- Encourage faculty, when appropriate, to make their research available to the public at-large on a local, national, and global basis in language that the public can understand and use.

4.1.3. UNC should promote increased partnerships between its own campuses and international universities and enhance the global awareness of its faculty and students.

Suggested Strategies:

- Provide more opportunities for faculty to participate in international collaborations and travel overseas.
- Provide more opportunities for students to work, study, and experience different cultures overseas, and promote foreign student exchange programs to increase the number of foreign students visiting UNC institutions.
- Set percentage goals to provide international experiences for our faculty and students.
- Utilize technology to create “virtual” international experiences.
- Increase student proficiency in foreign languages, including through language immersion programs.
- Expand students’ global and cultural awareness that includes an understanding of diverse cultures but also stresses the commonality of human problems through such efforts as:
 - Taking to scale successful existing UNC programs that focus on global awareness and global education.
 - Incorporating global awareness into the general education curriculum, and encouraging all majors and graduate programs to incorporate global awareness into their curricula.

4.2. Our Citizens and Their Future: Access to Higher Education

Major Finding: UNC should increase access to higher education for all North Carolinians, particularly for underserved regions, underrepresented populations, and non-traditional students.

Increasing access to higher education is critical to North Carolina’s future. As our state continues to transform socially and economically in today’s 21st-century, knowledge-based global environment, higher education attainment becomes increasingly important for rising numbers of our population. There are, however, regions of North Carolina and certain population groups that face significant obstacles to successfully attaining post-secondary education, including low- and moderate-income students, African-American males, and our state’s rapidly growing Hispanic student population. Moreover, the dynamic changes in today’s workforce, coupled with the significant numbers of aging baby boomers, creates an increased demand for higher education among working adults, non-traditional students, and lifelong learners. Finally, as North Carolina’s population continues to grow, so does UNC’s student population, which is expected to increase by 80,000 new students by 2017. These factors will significantly impact UNC in the years to come, and require strong, innovative approaches to accommodate not only *more* students, but more *diverse* students in *more* regions of our state.

Underserved Regions. Significant differences in economic opportunity and growth exist among our state’s regions. Population growth has not been even:

- In 2006, the Charlotte region, Research Triangle area, and the Piedmont Triad accounted for nearly 62% (5.47 million) of the state’s population. By contrast, the Northeast region accounted for only 4% (358,000).

Employment opportunities mirror population growth:

- In 2006, the Charlotte region, Research Triangle area, and the Piedmont Triad accounted for almost 64% (2.72 million) of all jobs in the state while the Northeast region accounted for fewer than 4% (163,000).

Not surprisingly, income levels also mirror these trends:

- In 2005, average wages were the highest in Charlotte (\$40,930), the Research Triangle area (\$40,370), and the Piedmont Triad (\$34,175) while the lowest average wages were in the Northeast region (\$26,412).

These population and economic trends mirror current UNC student enrollment. The largely urban I-85 corridor from Mecklenburg to Wake County consistently has produced a disproportionately large percentage of statewide UNC enrollment. In fact, just four counties accounted for more than one-third (35.6%) of all full-time, in-state UNC system enrollment: Wake (13.3%), Mecklenburg (10.3%), Guilford (7.2%), and Forsyth (4.8%).¹⁵

Despite UNC’s broad statewide presence – 17 constituent campuses, 100 Cooperative Extension Service Offices (one in every county), and a number of other facilities and programs, there are still regions of our state that do not have full access to UNC’s educational programs, most notably in rural North Carolina. Speakers at the Community Listening Forums in rural areas spoke of their hopes that UNC could help reduce the effects of the education divide, whereby many rural students do not appreciate the value of higher education, and those who do often leave for school elsewhere and do not return. They expressed a strong desire to have UNC provide more educational opportunities closer to, and preferably *in*, their communities, where long commutes to the closest UNC campus effectively bar access to higher education. Particularly strong calls for establishing a branch or satellite campus of UNC were heard from residents of Rocky Mount, Hickory, Henderson County, and Onslow County.

Speakers at all Forums expressed the need for more innovative degree and program delivery. For example, distance education and online courses, individual classes to obtain a skill or increase subject knowledge, and part-time evening classes were appealing to more than 80% of the UNC Tomorrow survey respondents, and 72 % of respondents ranked increasing distance education and online course offerings as the number one way in which UNC could have the greatest impact on their community. These innovative delivery mechanisms allow UNC to serve more students in more areas of the state. However, speakers at some rural forums cautioned that the lack of broadband internet access in their communities limited their ability to take advantage of online courses, and others indicated that online courses could not fully replace the “face-to-face” classroom experience.

Easing the transition from the public schools and community colleges was conveyed by Forum speakers as particularly important. Many expressed frustration at the difficulty in transferring

¹⁵ Fall 2006 UNC student enrollment figures.

from a community college to a UNC institution and urged UNC to develop a more “seamless” relationship with its community college partners. Others emphasized a need to better educate public school students, especially those in rural schools, about the available means for and advantages of college attendance.

Low- and Moderate-Income Students. A profile of family socio-economic circumstances of the under-18 population in North Carolina, extracted from the Census Bureau’s 2004 American Community Survey, underscores the daunting task that lies ahead in North Carolina higher education, as our more diverse youth population ages into traditional college years. Table 3 below shows the percentage of children under 18 who come from families earning less than \$30,000 annually, from families lacking college experience, and from families who do not own their own home. Note that the current Hispanic population under 18 has the highest percentage in every category.

Table 2: Socio-Economic Status by Populations Under 18 Years of Age

Under 18 Years of Age	Families Earning Less than \$30,000 Annually	Parents Lacking College Experience	Families Earn Less Than \$30,000 Annually and Lacking College Experience	Families Do Not Own Their Home
All children	32.0%	44.0%	55%	34.0%
Non-Hispanic Caucasians	19.7%	35.8%	43.7%	21.6%
Non-Caucasian	50.3%	56.4%	72.8%	54.7%
Hispanic	52.3%	75.0%	84.1%	56.0%

Children who grow up in these circumstances are highly unlikely to have either the financial resources to pay for college or the support and guidance – from family members and mentors as well as academic and social support programs – necessary to enable them to matriculate and graduate from college. In some instances, parents with limited economic resources are able to leverage the equity in their homes to finance college for their children; however, as Table 3 also indicates, leveraging home equity to finance higher education is often not realistic for these families.

A number of public and private colleges and universities, including the University of North Carolina at Chapel Hill, North Carolina State University, Appalachian State University, and the University of North Carolina at Wilmington, have launched initiatives designed to allow eligible low-income students to pursue higher education and graduate debt-free. This is a step in the right direction. However, if North Carolina colleges and universities are to improve both participation and graduation rates of the racial and ethnic groups, as well as the low income students likely to experience the greatest growth in the years ahead, such programs, or others designed to make college more affordable, will need to be expanded to all UNC institutions. This need also exists for moderate-income students, whose families earn just enough income to disqualify them from most federal and state need-based financial aid programs, effectively barring them from attending college. Ensuring equality of access to higher education for a much larger number of underrepresented students will go a long way toward enhancing the state’s competitiveness in the global marketplace.

Underrepresented Populations – African-American Males. Statistics on academic tracking, academic performance, and educational outcomes for African-American males are troubling:

- In 2005-06, African-American males represented 15.8% of all students in North Carolina public schools. But they were grossly *over-represented* in special education (30% of all students) and remedial education (23% of all students) – typically perceived as the non-college bound tracks – and grossly *under-represented* in Honors (8.2% of all students), Advanced Placement (4% of all students) and International Baccalaureate (3.0% of all students) programs – the academic tracks that serve as gateways to college.
- Almost two-thirds (63%) of African-American male fourth-graders performed below the basic level in reading (compared to 38% of all fourth-graders), and 65% performed below the basic level in science (compared to 35% of all fourth-graders) in 2005.
- 59% of African-American male eighth-graders performed below the basic level in reading (compared to 31% of all eighth-graders), and 75% performed below the basic level in science (compared to 47% of all eighth-graders) in 2005.
- African-American/multi-racial males represented 16% of the overall student population, but accounted for 39% to 46% of long-term suspensions between 1999-00 and 2003-04.
- Poor academic performance, especially in reading, and long-term suspensions are correlated with dropping out of school. In 2005-06, African American males accounted for 15.8% of all students in the North Carolina public school system, but 22% of all high school dropouts and 63% of all African-American high school dropouts.
- In part as a function of the low percentage of African-American males in high school academic prep tracks, and partly due to their high dropout rates, African-American males accounted for only 8.8% of all full-time undergraduates and 36% of all full-time African-American undergraduates in two- and four-year higher education institutions in 2003.

The economic costs of failing to educate the African-American male are staggering: the average difference in the lifetime earnings of an African-American male high school dropout and an African-American male high school graduate is estimated at \$433,347. The average difference in the lifetime earnings of an African-American male high school graduate and an African-American male college graduate is \$618,711. Moreover, African-American males who perform poorly in school are more likely to be unemployed or under-employed, live in poverty, and end up in the criminal justice system than their counterparts who graduate from high school and pursue post-secondary education. They are also less likely than their better-educated counterparts to form and maintain stable families.

Underrepresented Populations - Hispanics. North Carolina led the nation in immigration population change during the 1990s, and the state's foreign-born population, primarily among Hispanics, has continued to grow rapidly since 2000. Over the past 15 years, the state's total immigrant population increased by 387% (primarily among Hispanics), while its native-born population increased by only 21%.

Population diversity in North Carolina has been further propelled by high birth rates among Hispanics and other immigrants. Between 1990 and 2003, Asian or Pacific Islander births increased by 195.2%, and Hispanic births increased by 816.8%. Both of these birth rates far outpaced that of all other residents of the state (13.2%); Caucasian births during this same period grew by only 1.4%, and African American births actually *declined* by 11.6%. Because of the

rapid increase in Hispanic births, the Hispanic share of all North Carolina births increased from 1.6% in 1990 to 13.6% in 2003. During the same period, the Hispanic share of the population under age five in North Carolina increased from 1.9% to 14.1%.

Table 3: North Carolina Births by Race/Ethnicity, 1990 and 2003

	1990	2003	Change (%)
All Races	104,525	118,308	13.2
White	69,512	70,458	1.4
Blacks	30,726	27,170	-11.6
American Indian	1,516	1,637	8.0
Asian/Pacific Islander	1,052	3,106	195.2
Hispanic	1,754	16,084	817.0

Source: Centers for Disease Control, National Vital Statistics Reports, 1990 and 2003.

These developments have dramatically changed the racial and ethnic composition of North Carolina's population. Between 1990 and 2005, the state's Hispanic (594.8%), Asian (193.7%) and Pacific Islander (52.3%) populations grew much more rapidly than the Caucasian (19.9%) and African-American (21.2%) populations.¹⁶

In part because of these shifting demographic dynamics, the traditional college-age population (18 to 24) is projected to grow much more rapidly over the next four decades than in the 1990s, but this growth will not be evenly distributed across the racial and ethnic groups that make up North Carolina's population. The Caucasian share of the traditional student-age population will decrease while Asians, American Indians, African-Americans, and Hispanics will increase. The greatest growth will occur among Hispanics.

These shifts have significant implications for our state's educational system. By 2017, 30,000 additional students are projected to graduate from North Carolina high schools. Hispanic youth will account for nearly three-quarters (73% or 22,000) of these students. Because a significant number of students come from lower socio-economic backgrounds (more than half of the Hispanic students in our state come from families with annual incomes of less than \$30,000, who don't own their homes, and whose parents have no college experience), their access to higher education may be blocked.

These shifts also have significant economic and workforce implications for our state as our native-born population (median age 36), especially non-Hispanic Caucasians (median age 39), continues to age out of the work force, resulting in an increased reliance on Hispanics (median age 25), all immigrants (median age 34), and minorities (median age 29) to fuel future economic growth and development in the state. This trend has already started – Hispanics filled one in three new jobs created in North Carolina between 1995 and 2005.¹⁷ Given the increasing importance of higher education to economic competitiveness in today's knowledge-based global

¹⁶ Data in the preceding paragraphs derived from the Census Bureau's 1990 census data and 2005 American Community Survey.

¹⁷ *The Economic Impact of the Hispanic Population on the State of North Carolina*, Frank Hawkins Kenan Institute of Private Enterprise, University of North Carolina at Chapel Hill (January 2006).

economy, limiting access to affordable higher education for our state's growing Hispanic population raises serious concerns about our state's ability to remain competitive in the years ahead. Moreover, the current obstacles, both educational and financial, that Hispanic students face in pursuing higher education threaten to relegate them to permanent underclass status, which has serious social and fiscal implications, including increased social services and criminal justice costs.

Changing Workforce and Aging Population. At the same time that Hispanics and other immigrants are transforming the racial and ethnic complexion of the state, our native-born population is aging. In 2005, nearly half of the state's native-born work force were either aging baby boomers (born between 1946 and 1964 – 26.5%) or pre-boomers (born before 1946 – 17%). Currently, 1 out of every 5 workers in North Carolina's non-immigrant workforce is over the age of 61.¹⁸ This dramatic trend creates a demand for increased higher education by two groups: employers and employees seeking to fill the huge workforce gaps resulting from baby boomer retirements, and baby boomers seeking personal enrichment and new professional opportunities.

As the rate of technological change and the pace of globalization continue to accelerate, coupled with growing workforce gaps as baby boomers retire, greater demand will be placed on North Carolina universities to accommodate a growing number of adults who will need to retool and upgrade their skills in order to compete for new jobs in a rapidly changing economy. This need was expressed in the UNC Tomorrow survey, where 64% of respondents indicated that advancing their education would improve job opportunities or increase earning potential. One can see signs of the likely increase in the demand for lifelong education services in recent long-term unemployment statistics, which demonstrate that, as the pace of economic change accelerates, a traditionally earned college degree is no longer the end point of education.

The adult population (25 and older) will drive the demand for lifelong education in the future. Pivotal here will be the huge cohort of baby boomers who are now entering their 50s and 60s. Growing numbers of them have been out of college for 30 years or more and are searching for intellectual and skill revitalization. A substantial portion is sufficiently well-off to be retiring early. (In fact, the average retirement age for college graduates is declining.) This group, which holds more than half of the disposable income in the country, constitutes a major demographic market now being targeted by the business world. Were they to become re-engaged in higher education, they could also be extremely valuable in bringing real-world experiences and perspectives to classroom discussion and debate, and could be a source of financial support for our universities in the future.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

4.2.1. UNC should increase access to its educational programs – including academic courses, degree programs at all levels, and certificate programs – for traditional students, non-traditional students, and lifelong learners.

¹⁸ U.S. Census Bureau, 2005 American Community Survey.

Suggested Strategies:

- Broaden and innovate delivery of courses and degree programs through additional online and distance education programs (including expanding online courses and degree programs offered through University of North Carolina Online), evening and weekend classes and programs, improved facility utilization (class and course scheduling and academic calendar innovations), and other flexible options such as courses of varying length (example: intensive six week courses) that meet the needs of working adults and targeted groups such as full-time employers, corporations, government agencies, and the military.
- Explore the feasibility of establishing satellite campuses and higher education centers, especially in high-need underserved areas.
- Recognize that the lack of access to full broadband internet service in some regions of the state limits access to online and distance education programs at the K-12, community college, and University levels, and utilize existing resources (such as MCNC – formerly the Microelectronics Center of North Carolina) in increasing broadband access.
- Secure funding for year-round enrollment to maximize use of existing facilities and accelerate students toward degree completion.
- Promote the development of collaborative partnerships with corporations, military bases, and other entities in which appropriate degree and continuing education programs are developed and offered to these identified pools of learners.
- Develop more partnerships with private colleges and universities (example: joint degree programs).
- Encourage increased utilization of UNC’s historically black campuses by all of the state’s population, including strategies for increased recruitment of high-achieving public school students for enrollment in HBUs.
- Research and develop evidence-based strategies to engage individuals who are not pursuing higher education to re-enter the education system.

4.2.2. UNC should continue ongoing efforts with the North Carolina Community College System to strengthen and streamline articulation between the two systems to develop a more seamless relationship.

Suggested Strategies:

- Strengthen and broaden the comprehensive articulation agreement to ensure more seamless transition for students transferring between community colleges and UNC institutions.
- Improve academic advising for community college students to better prepare them for transfer to a four-year degree program/institution.
- Explore the use of electronic advising on course and degree requirements across the community college and UNC systems.
- Increase the number of 2+2 programs and other joint programs between UNC and community colleges.
- Support the Community College System’s efforts to increase associates degree offerings.

- Support increased funding for community college faculty and classes in core and high-need curricula.
- Explore use of joint and shared facilities on both community college and UNC campuses.

4.2.3. UNC should be a model for accommodating the needs of persons with disabilities, including students, faculty, staff, and the general public.

Suggested Strategies:

- Regularly review UNC’s physical and other accommodations to ensure full compliance with all applicable state and federal laws.
- Ensure appropriate accommodations are available at all University-sponsored events.

4.2.4. UNC should maintain affordability and increase financial aid options.

Suggested Strategies:

- Reaffirm commitment to the affordability of UNC.
- Increase, diversify, and target financial aid opportunities.
- Communicate more clearly all information about financial aid options and processes, especially to middle and high school students, parents, and educators.
- Ensure that student tuition and fees are more directly aligned with the core missions of UNC.

4.2.5. UNC should increase the educational attainment of all underrepresented populations, especially African-American male and Hispanic students.

Suggested Strategies:

- Investigate where UNC is losing representation in its student enrollment compared to the general population, such as among male students, and identify specific strategies for increasing the educational attainment of those underrepresented populations.
- Develop strategies to address the unique problems confronting the state’s African-American male population, including:
 - Leveraging UNC expertise to identify specific intervention strategies including recruitment and retention strategies.
 - Inventorying existing efforts within the UNC system and assessing their effectiveness.
 - Exploring best practices nationally.
 - Working with our state’s public school system to improve educational outcomes for African-American males.
 - Devising strategies to increase the minority presence in higher education, particularly African-American males.
 - Increasing the number of African-American faculty at all UNC institutions and helping increase the number of African-American public school teachers.

- Identifying within the UNC system existing successful outreach and student recruitment efforts within the African-American community.
- Identify specific strategies for serving Hispanic students and increasing their educational attainment, including:
 - Collaborating with private entities, including philanthropic organizations and businesses, to identify and increase scholarship opportunities for Hispanic students.
 - Focusing research efforts on the impact of the growing Hispanic population and issues related to their educational attainment, including undocumented students.
 - Increasing the number of Hispanic faculty at UNC institutions.
 - Examining whether and under what circumstances, if any, undocumented students who graduate from North Carolina high schools and who are academically qualified for admission to a UNC institution should be charged in-state tuition. In doing so, the University should examine the associated legal issues. It should also research and assess the economic and social impact on the state and the potential cost to North Carolina taxpayers of providing an affordable college education to undocumented students, versus the ongoing costs to the economy and well-being of North Carolina that result from the lack of higher educational attainment among undocumented students.
 - Identifying within the UNC system existing successful outreach and student recruitment efforts within the Hispanic community.
 - Exploring best practices nationally that successfully improve Hispanic student educational attainment.
 - Working with the K-12 system to improve educational outcomes for Hispanic students.

4.2.6. UNC should help ensure that all students are better prepared to enter and succeed academically in college.

Suggested Strategies:

- Maintain and increase the quality of a UNC education.
- Raise admission standards, expand conditional admission programs, work with the Community College System to accept more students not yet ready to enter a university, and hold all UNC institutions to high academic standards.
- Provide better information about college admission requirements and offer stronger academic advising at the middle and high school level.
- Develop a clearer public understanding of “college readiness” in its many forms so that expectations for college attainment are better understood.
- Upgrade and expand college-readiness programs such as summer bridge programs, early college programs, and online Learn and Earn and early college programs for high school students.
- Implement, monitor, and assess ongoing initiatives to improve graduation and retention rates.
- Strengthen programs that provide additional academic support to students, especially freshmen, in need of special assistance.

- Collaborate with the NC State Board of Education and the NC Department of Public Instruction on improvements to our state’s public school system.
- Improve student advising at the public school, community college, and University levels to build better awareness about career options, workforce demands, and “soft skills” needed for success in the 21st century economy (example: fully utilize CFNC’s Bridges Program).
- Remove barriers to seamless transition between community colleges and UNC institutions.

4.3. Our Children and Their Future: Improving Public Education

Major Finding: UNC should be more actively involved in solving North Carolina’s public education challenges.

Public education was a dominant theme among the concerns expressed by speakers at the UNC Tomorrow Community Listening Forums. Citizens across our state expressed the need for not only more teachers to address the current teacher shortage, but also better-educated teachers who are equipped with the skills to teach successfully in today’s classroom.

Those who spoke at the public forums also underscored the importance of quality K-12 public education to the future success of their communities, noting that a strong public education leads to success in higher education. This sentiment was shared by UNC Tomorrow survey respondents, who rated improving public education as the most important challenge impacting the future success of their communities (rating of 8.89 on a scale of 1 to 10), and want to see UNC respond to this challenge (67% of respondents believe UNC should increase programs and technical assistance for K-12 teachers). The IEI’s Business Committee on Higher Education echoed the importance of improving public education in our state in finding that “[a] sound K-12 system is our state’s most pressing need.” Improving our state’s public education system is critical to North Carolina’s – and UNC’s – future success.

North Carolina public schools are challenged by a range of issues, including crumbling infrastructure and shortages of qualified, well-trained teachers. Further complicating matters, the demography of the school-age population is changing dramatically.

Shifting Demographics of the School-Age Population. During the past 20 years, the percentage of Caucasian students in the North Carolina public school system declined from 67.2% (1985-86) to 57.5% (2004-05). This decline has been offset by an increase in the number of Hispanic youth. During that same period, Hispanic enrollment increased by 2,614% (from 3,735 in 1985-86 to 101,380 in 2004-05), while overall enrollment increased by only 24% (from 1,086,130 in 1985-86 to 1,347,177 in 2004-05). Hispanic enrollment growth has been especially strong since the mid-1990s, increasing by 33,933 students between 1995 and 2000 and by 45,148 students between 2000 and 2004. During that four-year period alone, Hispanic enrollment accounted for 57% of total enrollment growth in our state’s public school system.

There are both geographic and demographic manifestations of the K-12 public education challenge in our state. Geographically, the crisis is concentrated in schools and school districts with high concentrations of poor, minority, and immigrant children, who will make up a majority of the traditional college-age population in the future. Demographically, the poor performance of African American male students, without respect to the racial and/or socio-economic composition of schools they attend, has reached critical proportions.

Non-Caucasian youth accounted for 85% of enrollment in the state's 50 low-performing schools, compared with 43% of enrollment in all North Carolina public schools in 2005-06. The statistics with regard to these students' preparedness and performance are dire:

- In comparison with a statewide average of 69.1%, only 43% of the elementary, 44% of the middle school, 40% of the high school, and 41% of the charter school students performed at grade level on end-of-course tests in 2005-06.
- Only 46% of the students attending the 14 low-performing high schools took the SAT, compared with 71% of all high school students in the state.
- For students who took the SAT in these 14 low-performing high schools, the average score (825) was 183 points below the statewide average SAT score (1,008).

In most instances, young people who attend predominantly minority public schools do not fully benefit from the rich educational resources — financial and otherwise — that exist in this state. Attending such schools substantially reduces students' odds of qualifying for admission to college and, by extension, of acquiring the skills necessary to compete in the knowledge-based economy of the 21st century.

Teacher Shortage. The Employment Security Commission estimates that North Carolina will need 34,000 additional teachers by 2014. UNC, as our state's primary producer of teaching graduates, must lead in meeting this challenge and do so in a way that produces a pool of teachers who more closely reflect the changing demographics of our state (currently 83% of all public elementary and secondary school teachers are Caucasian).

The state's shortage of licensed, well-prepared teachers has contributed to poor student performance in our state's low-performing schools:

- Whereas 16% of teachers in all schools in North Carolina are *not* fully licensed to teach, 25% of the teachers in the low-performing middle and high schools and 35% of the teachers in low-performing charter schools are *not* fully licensed.
- 23% of teachers across North Carolina have less than three years of teaching experience. In comparison, the state's low-performing schools are less experienced:
 - 37% of elementary school teachers have less than three years of teaching experience.
 - 35% of middle school teachers have less than three years of teaching experience.
 - 28% of high school teachers have less than three years of teaching experience.
- Schools across the state have a 20% teacher turnover rate. In comparison, low-performing schools have higher teacher turnover rates. The rate is 37% in low-performing elementary schools, 30% in low-performing middle schools, and 31% in low-performing high schools.

High School Dropouts. The issue of high school dropouts is of particular concern. Dropping out of high school increases the probability of lower pay, decreased job mobility, involvement in crime, involvement in substance abuse, and pregnancy. Instead of contributing to the economic growth of the region and the state, many dropouts cost the local community, the region, and the state not only revenue, but also in the increased cost of social services and the loss of human resources and labor power.

In 2005-06, North Carolina's dropout rate was 5.04%, an increase of almost 10% from the previous year.¹⁹ That figure represents 22,180 dropouts in grades nine through 12. Almost one-third (32.7%) of all dropouts occurred the ninth grade, with 25.7% of students dropping out in the 10th grade and 22.4% of students dropping out in the 11th grade. Dropout rates increased in frequency as students reached age 16, and 79% of dropouts occurred between the ages of 16 and 18. Male students accounted for almost 60% of all dropouts, the highest proportion ever reported and the largest one-year increase in the proportion on record; that increase is more than twice that of the statistic recorded for female students. Hispanic students dropped out at a rate of 8.69% (the highest of any ethnic/racial group), American Indian students dropped out at a rate of 8.37% and African American students dropped out at a rate of 5.63%. African American males accounted for a disproportionate amount of the increase in dropout count, and the dropout rate for black males increased to 7.01%, an 8.4% increase over the 2004-2005 rate. With the exception of American Indian students, all the groups saw increases in their dropout rates from the previous year.

Those statistics have real economic consequences. During a lifetime, a high school dropout will earn \$200,000 less than a high school graduate and \$800,000 less than a college graduate. Dropouts make up nearly half the heads of households on welfare and half the prison populations. They also are three times more likely than college graduates to be unemployed.

Teenage Pregnancy. Education also plays a critical role in the incidence of teen pregnancy. Teens that are academically behind are three to five times more likely than their peers to become pregnant. Half of all teen mothers drop out of school and never return. Teen fathers are 40% less likely to graduate than their peers. Teen parents are less likely to finish high school and thus are more likely to remain in low-paying jobs and to have difficulty supporting their families.

Those statistics also have direct economic consequences. Families headed by teen mothers are seven times more likely than other families to live below the poverty level. Each teen birth in North Carolina costs taxpayers about \$18,000. Child abuse and child neglect are more likely with teenage parents, and costs for public assistance programs such as Medicaid, WIC, and Food Stamps, are also greatly affected. Studies also indicate there is a higher incidence of birth defects and learning and behavior disorders among babies born to teens, leading to higher medical and social services costs (Focus Adolescent Services, 2000).

Consequences of Gang Activity. Gang activity in North Carolina is on the rise and has serious implications for our state's public schools. Based on the Governor's Crime Commission's Gang Survey of 2004, in 1999 there were 332 gangs in the state with a total membership of 5,068. In

¹⁹ North Carolina Department of Public Instruction, *Annual Report on Dropout Events and Rates* (February 2007).

2004, the number of gangs jumped to 387 with a total membership of 8,517. Ages of gang members ranged from 8-50, with the highest concentration of members being in the 16-24 age group and the next highest in the 13-15 age group. African Americans accounted for 26.4% of gang membership, Hispanics accounted for 22.2%, and Mixed Groups accounted for 15.8% (Hayes, 2005). A survey conducted in 1999 by the Crime Commission's Criminal Justice Analysis Center found that nearly 25% of the gang members at that time were still in the state's public schools.²⁰

UNC can and should play a role in improving the state's low-performing schools, in increasing the educational attainment of minority students — especially African American males and Hispanics — in improving low-performing schools, and in helping address pressing issues such as teen pregnancy and gang activity. Success will hinge, however, on the ability of the state's colleges and universities to forge strategic cross-campus and inter-university partnerships in the areas where public education institutions, especially low-performing schools, need the most help.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

4.3.1. UNC should improve the quantity, quality, and geographic distribution of public school teachers.

Suggested Strategies:

- Review UNC education-degree programs to ensure that UNC education graduates (e.g., teachers) are fully prepared for the challenges (such as student behavior and safety concerns) of today's classroom environment and for new education paradigms (such as technology competencies, cultural and global awareness, and the focus on 21st century skills and knowledge).
- Ensure that UNC education-degree programs fully comply with the N.C. State Board of Educations' new standards and program guidelines.
- Increase diversity of UNC faculty and support faculty who educate teachers on how to teach diverse learners.
- Assess the performance of public school students taught by graduates of UNC institutions and by lateral-entry teachers using data and evidence-based evaluations. The data will be used to identify successful UNC institutions and programs, to identify best practices for educating teachers by subject area, and to improve less successful programs.
- Strengthen and accelerate ongoing efforts to expand 2+2 programs with community colleges to help increase the number of teachers in rural and underserved areas, and explore the increased use of online and distance-education programs in conjunction with site-based programs.
- Implement, monitor, and assess the effectiveness of teacher-recruitment plans established for UNC institutions, and continue to enhance teacher recruitment through efforts such as:
 - Reviewing teacher education scholarship loan programs to identify ways in which such programs can be used more effectively in teacher recruitment.

²⁰ This is based upon 171 surveys out of 492 (34.8%) being returned by the School Resource Officers of the state.

- Exploring the possible establishment of a North Carolina program modeled after Teach For America (perhaps called “Teach for North Carolina”) to help attract strong students to the teaching profession.
- Continuing efforts to identify other innovative teacher-recruitment strategies.
- Increase efforts to recruit minority students into the teaching profession.
- Increase content-based professional development programs, as well as mentoring opportunities for teachers with UNC faculty (e.g., NCSU Kenan Fellows program, the Yale Teacher Institutes in the Charlotte-Mecklenburg school system, and the pilot partnership between UNCG, NCA&T and the Guilford County school system).
- Strengthen efforts to encourage foreign language students to major in education to increase the number of public school teachers with foreign language proficiency.

4.3.2. UNC should help address the shortage of science and math teachers, especially in rural areas.

Suggested Strategies:

- Increase efforts to recruit students into science and math teaching earlier in their lives (even as early as elementary school).
- Provide scholarships for science, technology, engineering, and math (STEM) majors to encourage them to major in education.
- Expand the N.C. Math and Science Education Network (MSEN) across the UNC system and the state, including the Pre-College Program.
- Better utilize the resources and expertise of the North Carolina School of Science and Mathematics, such as:
 - Communicating best practices to science/math teachers statewide.
 - Increasing distance-education capabilities of NCSSM faculty to teach more science and math classes in underserved areas.
 - Increasing geographic diversity of the school’s students.
 - Using NCSSM as a “teaching laboratory” for science and math teachers in the state.
 - Better communicating the school’s resources to public schools that could benefit from them.
- Explore the possible establishment of regional programs modeled on NCSSM in western and eastern North Carolina to enhance science and math teaching.
- Research and assess the effects of differentiated salaries in high-need teaching areas — especially science and math — and work to expand UNC’s differential salary pilot program for science and math teachers in Guilford County, if it is proven successful.
- Develop partnerships with STEM-based private businesses to support employees teaching in STEM areas using the visiting teacher model (e.g., NCSU Kenan Fellows Program).

4.3.3. UNC should strengthen efforts, in cooperation with the North Carolina State Board of Community Colleges and the Community College System, the North Carolina State Board of

Education, and the North Carolina Department of Public Instruction, to enhance the teaching skills of public school faculty and the leadership skills of public school administrators.

Suggested Strategies:

- Create professional development programs for teachers to highlight innovative teaching methods (e.g., Gates Foundation New Schools Project).
- Recognize existing paradigms in public education teaching methods and the need for more innovative approaches, and develop reward systems for innovative teaching.
- Increase professional-development programs for public school administrators.
- Deliver more professional-development programs for teachers and administrators, both online and via distance education.
- Inventory and assess all programs in the state that support K-12 teachers and administrators, and identify and address gaps in these support programs.
- Increase the effectiveness of the UNC Center for School Leadership Development.
- Expand opportunities for teachers to participate in programs at different campuses of the N.C. Center for the Advancement of Teaching (NCCAT).
- Research the conditions under which teachers work, with the aim to improve teacher retention and effectiveness.
- Work with the North Carolina Education Cabinet to strengthen its effectiveness.

4.3.4. UNC should leverage its expertise and increase collaborations with the State Board of Education and Department of Public Instruction to lower our state’s dropout rate and improve academic achievement in all North Carolina public schools, especially those that are high-priority and low-performing.

Suggested Strategies:

- Leverage UNC expertise in assisting high-priority and low-performing schools to achieve better academic performance.
- Investigate whether raising the compulsory attendance age to 18 would raise performance.
- Identify through research the causes of dropout trends, particularly at grade levels where dropout rates spike, such as eighth grade.
- Link University research and expertise with state-level efforts to close the achievement gap, (e.g., Legislative Study Commissions).
- Educate students on the need for and value of education to motivate them toward improved academic performance.
- Identify successful programs, and implement them on a larger scale.
- Research early childhood factors that lead to the inability to perform basic reading and arithmetic skills in third or fourth grade, which is when many students begin to drop out “psychologically.”

4.3.5. UNC should strengthen partnerships with the State Board of Education, the N.C. Department of Public Instruction, the North Carolina Community College System, and our

state's Independent Colleges and Universities to develop a seamless educational continuum from pre-K through higher education ("Birth-20").

Suggested Strategies:

- Improve curriculum alignment between high school courses and university and community college general education courses, especially around “soft skills.”
- Improve alignment between high school graduation requirements and college admission requirements.
- Leverage UNC expertise in addressing public education issues, and develop a system-wide structure for inter-institutional collaboration through which faculty research and scholarship can be accessed and applied.
- Continue and strengthen internal communications among UNC, Community College, SBOE, and DPI leadership staff, as well as those of independent colleges and universities.
- Support the state’s efforts to align high school and undergraduate curricula through the national “Achieve” initiative.
- Develop better student-performance diagnostic tools and innovative learning modules. They can be used to identify at-risk students earlier in their academic careers and to improve academic achievement. Such tools and programs can be tested through collaborative pilot projects (e.g., proposed collaboration with SAS in the use of its EVAAS²¹ and Curriculum Pathways programs).

4.4 Our Communities and Their Economic Transformation

Major Finding: UNC should be more actively engaged in enhancing the economic transformation and community development of North Carolina’s regions and the state as a whole.

Throughout the Community Listening Forums, the call for UNC to play a greater role in community development and economic transformation was significant. While the particular economic needs expressed varied from region to region, the theme was the same — increased engagement by UNC in stimulating economic growth and community development as a whole.

This theme also was expressed by UNC Tomorrow survey respondents, 63% of whom felt that increasing the number of well-paying jobs was absolutely critical to the future success of their community. Almost half of the respondents felt that UNC could have the greatest impact on their community by focusing more effort and resources on economic development assistance, business start-up assistance, social and community advising, and technical assistance. The needs expressed by the public reflect the significant economic shifts impacting our state.

North Carolina is in the midst of a major economic transformation. The traditional industries that built the state in the 20th century — tobacco, textiles, and furniture — are now downsizing in the

²¹ EVAAS is a value-added student performance and assessment diagnostic tool developed by SAS, Inc.

face of globalization, international competition, and changing consumer preferences. Fortunately, new industries — including technology, pharmaceuticals, and finance — have developed to take their place, but the transition has not been smooth. While thousands of North Carolinians have seen their lives improve in the high-tech global marketplace of the 21st century, many others have been left behind. The distinguishing feature between the two populations is at the core of UNC’s mission: education.

The Divided Path of Higher- and Lower-Skilled Workers. Education in the new economy has divided North Carolina in two ways. First, it has divided our workers. Workers with higher levels of educational attainment have in large part done well in today’s economy. The modern economy’s focus on subject-matter knowledge, as well as problem-solving and interpersonal skills, has meant workers with these traits have succeeded and moved up the economic ladder. In contrast, workers with modest levels of educational attainment have faced a much different job market. They have seen low-skill, moderate-income jobs, easily found in previous decades, migrate increasingly to foreign countries where labor costs are lower. This has left modestly educated workers qualified for an ample number of service-sector jobs, but these jobs generally pay less.

The diverse paths of more-educated and less-educated workers in North Carolina are clearly seen in the statistics. During the 2000s, only college-educated workers experienced wage increases that exceeded inflation. Workers with less than a college education saw their inflation-adjusted wages fall. Furthermore, the fastest-expanding jobs have been those at the high end *and* the low end of the pay scale. Jobs with moderate rates of pay have been growing at the slowest pace. This phenomenon has been termed the “hollowing-out” of the job market or the “disappearing middle.”

Geographic Considerations. The new North Carolina economy has also divided the state geographically. Economic growth and improvements in living standards have been most rapid in metropolitan counties and have been slower or stagnant in many rural and small-town counties. Again, the determining factor seems to be education. Counties with higher levels of educational attainment among their workers — usually metro counties — have been more successful in creating and attracting the new industries of the 21st century and enhanced job opportunities.

These 21st century economic trends show no signs of abating and might even accelerate. The rest of the world also recognizes the benefits of education, “soft skills,” analytical reasoning, and problem-solving. Traditional trading partners in Europe and the Western Hemisphere, in addition to new trading partners in Asia, are all putting increased focus on education and skills development. The competition for the best jobs and the best pay will only get stiffer, moving increasingly from low-skill, low-wage jobs to higher-skill, higher-wage jobs. If North Carolina doesn’t keep up, these top jobs will go elsewhere.

All of these factors suggest that UNC’s mission will play a vital role on several levels in the decades ahead. First and foremost, UNC should continue to educate and equip North Carolinians with the talents and skills necessary to be successful in today’s highly competitive, internationally linked world. UNC should be prepared to do this for a more diverse student body, perhaps in ways very different than in the past. UNC also should do more to apply its resources

and knowledge-base to the economic issues facing specific geographic regions in the state. Finally, UNC should serve as an “interpreter of change” — understanding and anticipating broad trends in the economy and workforce and communicating the meaning and implications of those trends to both private and public sector decision-makers.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

4.4.1. UNC should increase its capacity and commitment to respond to and lead economic transformation and community development.

Suggested Strategies:

- Promote and educate communities and students (both at the public school and at the higher-education levels) in entrepreneurship and innovation to ensure that they can adjust to and compete in the knowledge-based global economy.
- Link faculty expertise to regional economic strategies.
- Facilitate access to UNC expertise in economic and community-development initiatives.
- Develop communications mechanisms to facilitate better interaction between UNC and business, industry, community, government, and nonprofit sectors.
- Encourage the faculty to make its research available to the public in an accessible and understandable form — on a local, national, and global basis.
- Encourage, reward, and provide support for faculty research and practice at all UNC institutions in applied public policy analysis focusing on important regional and statewide issues, including that done in partnership with or on behalf of non-profit and public-sector organizations.
- Work more closely with government and nonprofit organizations in addressing community challenges through such efforts as:
 - Collaborations between faculty and nonprofits that incorporate real-world experiences in a particular subject area into students’ educational experience.
 - Faculty and student research and public-service projects in partnership with nonprofits focused on community needs.
 - Advise students about career opportunities in the nonprofit sector and about financial incentives to pursue such careers (e.g., recently approved federal loan forgiveness program).
- Enhance and streamline dissemination and commercialization of UNC technologies and discoveries to fuel development of new and emerging industries and job creation.

4.4.2. UNC should focus specific effort in meeting the needs of rural and underserved areas of the state.

Suggested Strategies:

- Increase adult-learning opportunities, educational programs, and degree delivery to residents of rural areas.
- Develop specific plans to assist in locating high-need graduates (e.g., teachers and health-care professionals) in underserved areas.

- Work collaboratively with the State Board of Education and the Department of Public Instruction to improve public school student-performance in low-performing schools and school districts.
- Target UNC institution degree programs and faculty research in rural North Carolina to stimulate growth of new and emerging industries and enhance existing industries.
- Leverage faculty expertise across UNC to help address pressing needs of rural areas, such as health disparities and poverty rates.

4.4.3. UNC should seek to align appropriate campus programs with the strategic economic plans (including sector and cluster plans) of their regions and the state, recognizing the unique differences and challenges of our state’s economic and geographic regions.

Suggested Strategies:

- Develop a Web-based portal that industries can use to find specific expertise at all UNC campuses.
- Identify an appropriate individual at each campus charged with overseeing that campus’ economic transformation activities, and require each campus to report annually on its efforts to enhance the economic transformation of our state.
- Develop degree programs and continuing-education programs to meet the regional and statewide needs of specific employers (such as the current UNC collaboration with Blue Cross Blue Shield of N.C.’s Blue University program) and business sectors (such as military, strategic industry clusters, and trade associations).
- Institutionalize communication mechanisms between UNC and regional business and industry sectors.
- Build on the successful model of UNC’s collaboration with North Carolina’s biotech industry in developing additional collaborations with business and industry sectors (both existing and emerging) to target UNC degree and continuing-education programs and research activities where appropriate to enhance and stimulate economic growth.
- Leverage UNC expertise and resources in enhancing regional and statewide economic-transformation strategies (such as in regional economic-development planning) and stimulating regional economic opportunities (such as research efforts and education programs targeted at new and emerging industries and entrepreneurship).
- Support increased collaborations between the private sector and UNC’s historically black universities.

4.4.4. UNC should promote the arts and cultural enrichment in all regions of the state.

Suggested Strategies:

- Support and expand campus artistic and cultural programs, and increase offerings of such programs to the public.
- Increase collaborations with public schools to strengthen K-12 arts education.
- Develop strategies for expanding campus artistic and cultural programs to communities that do not have a UNC campus located in or near them.

- Develop innovative course offerings (such as online and distance-education offerings by the N.C. School of the Arts) targeted to nonprofits, regional theater, performing arts, and other cultural and artistic organizations. That would increase the artistic, technology, management and leadership skills of the staff of such organizations.

4.4.5. UNC should facilitate inclusive discussions on important community issues.

Suggested Strategies:

- Facilitate community dialogue on important community issues.
- Communicate faculty expertise on important community issues to broader audiences.
- Value and reward faculty involvement in addressing important community issues when considering faculty incentives, promotion and tenure, and granting release time.

4.5. Our Health

Major Finding: UNC should lead in improving the health and wellness of all people and communities in our state.

The dominant trend confronting the state’s health-care industry, the health professions, and the University system in North Carolina is the rapid growth of the population and the even higher growth rate among the elderly. North Carolina is now home to more than 8.5 million people, and our population is growing almost twice as fast as the U.S. population. Our residents are young — 25% are children 18 and younger — as well as old — 12% are older than 65. Our oldest population group, those more than 85, has already doubled in the last seven years. By 2030, the over-65 population will grow by more than one million. Our fast-growing population requires more health-care resources and an aging population requires exponentially more; the application of age-weighting with geographic and demographic data will yield a more accurate view of the magnitude of the challenge.

Health care in North Carolina currently accounts for as much as \$60 billion, or 18% of the total state product (estimates based on CMS and North Carolina Chamber data). North Carolina ranked 30th among all states in Health System Performance, 32nd in access, 22nd in quality, 22nd in avoidable hospital use and costs, 32nd in equity and 34th in healthy lives (Commonwealth Fund, 2007). If North Carolina were to improve to the level of the “best-performing state” in the Commonwealth ratings, there would be 495,775 fewer uninsured and 309,982 children with a medical home. Additionally, reduced Medicare admissions would save \$34,954,000. (Commonwealth Fund, 2007).

Health Disparities. Our state’s population groups and regions do not enjoy an equal level of health and wellness. African Americans experience 54% more premature deaths than Caucasians. Deaths from cancer are 24% more prevalent among African Americans than Caucasians. Premature death rates are 17% lower in the metropolitan counties of our state than in the most rural counties. The percentage of women who receive prenatal care ranges from 70%

among Hispanics to 91% among Caucasians.²² While a number of UNC centers, programs, and entities, such as the UNC Health System and AHEC, are actively engaged in addressing health disparities within the affected communities and provide a significant level of direct patient care across our state, there is still much to be done.

Health-Care System Professionals. The state has a robust health-care system, with 125 hospitals, more than 18,000 physicians, 80,000 registered nurses, 7,500 pharmacists, and 3,800 dentists. Yet compared to other states on a per-population basis, the state is below the national average for most health care workers — including physicians — and is near the bottom for the number of dentists. By 2014, North Carolina will need 41,000 more nursing professionals and 3,300 more social workers.²³ Further exacerbating this challenge, our supply of health professionals is not proportionally distributed across our state, and many rural areas are experiencing acute shortages. There is no consensus on the ideal mix and number of health care practitioners for a given population, but there is evidence that the state has not yet achieved an optimal supply of medical and health-care resources to match its population’s health-care needs. The state continues to have counties with critical primary-care health professions shortages, and physicians, nurses, dentists, and other health professionals are needed in many communities and institutions. The citizens of North Carolina recognized these shortages and others, including that of public-health professionals, mental-health professionals and social workers. At all of the Community Listening Forums, citizens asked UNC to produce more health professionals and to train and place them in their local communities. UNC Tomorrow survey respondents ranked “providing improved access to health care” as the second most important challenge facing their communities (rating of 8.2 on a scale of 1 to 10), and 53% indicated that UNC could have the greatest impact on their community by increasing its resources and efforts to provide medical care or health care advice. Clearly, increasing both the number and geographic distribution of health care professionals will improve North Carolinians’ access to health care.

The growth of health care costs is viewed by many as a problem of affordability, but it also reflects an important sector of economic growth and opportunity. Improvements in health status and longevity come at a cost, and we are willing to pay for healthier, longer lives more and more. One role of UNC is to help its citizens understand this trade-off. Another role of UNC is to make the health care system as efficient, as effective, and as accessible as it can be. Yet another important role is the direct delivery of health care UNC provides to citizens across the state through the UNC Health Care System (including UNC Hospitals), ECU Brody School of Medicine, and the AHEC system. Finally, the role of UNC is to educate health professionals and health-professional faculty.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

4.5.1. UNC should lead in improving health and wellness in North Carolina.

Suggested Strategies:

²² Source: United Health Foundation. America's Health Rankings, 2006-2007.

²³ State of North Carolina Workforce Report, The North Carolina Commission on Workforce Development, January 2007.

- Apply to the University’s health-care systems the best-available practices to promote a healthier population in healthy communities through prevention and direct care.
- Prioritize programs and interventions in UNC’s health-care systems and throughout its leadership in UNC’s medical schools, the schools of public health, social work, nursing, pharmacy, dentistry and AHEC to help improve the health of all North Carolinians.
- Use proven programs and mechanisms to improve access to health care, and help educate the public about model systems that enhance access.
- Make UNC institutions models of health and wellness through food service, recreation, and wellness programs for students, faculty, and staff.
- Focus research efforts on health disparities among population groups and among geographic regions in the state.

4.5.2. UNC should educate more health professionals.

Suggested Strategies:

- Eliminate the barriers that prevent our universities and community colleges from training needed health care professionals.
- Create/support regional education programs in the health professions so that graduates can easily practice in underserved communities.
- Expand programs that emphasize community-based training.
- Increase students’ exposure to community-based practices.
- Increase numbers of health-profession faculty for both UNC institutions and community colleges, especially in the fields of nursing and allied health.
- Target recruiting efforts, financial aid, and residency and clinical practicum opportunities to increase racial and geographic diversity among both health-care professionals and health-profession faculty.
- Develop accurate projections of needed health care professionals, and establish a system-wide planning process to address those needs.
- Target resources to UNC institutions with the greatest success in educating health-care professionals that ultimately practice in the regions with the greatest need.

4.5.3 UNC should lead in utilizing health information to improve health and wellness in North Carolina.

Suggested Strategies:

- Monitor health professional supply, utilization, and cost statistics to allow us to understand the dynamics of the supply and respond to shortages and surpluses in a way that reduces fluctuations.
- Support the development of other data systems that monitor health-care utilization and costs to help the state and other stakeholders understand how to most efficiently and effectively deliver care.
- Develop an organized, University-based program or institute to assist government officials and concerned citizens to improve our mental and behavioral health services in

the State. The program or institute would evaluate policy options, host policy forums, and serve as an information clearinghouse.

4.6. Our Environment

Major Finding: UNC should assume a leadership role in addressing the state's energy and environmental challenges.

The future of the North Carolina economy, the quality of our environment, and how we use energy are intricately and inseparably intertwined.

Direct Spending and Economic Potential. North Carolinians spent over \$20 billion in 2005 fueling their vehicles and powering their buildings and equipment. This represents 7% of total state economic activity upon which the other 93% relies. Because North Carolina has no easily accessible fossil fuels, we import approximately \$16 billion-worth of petroleum and coal products. A study conducted for the N.C. Utilities Commission in the fall of 2006 (the LaCapra Study), found that North Carolina utilities could generate a substantial portion of their power from in-state renewable energy sources and energy-efficiency conservation measures. Doing so would generate more than 40,000 net new jobs and would displace up to 14 million tons of carbon annually, at a rate of impact that was less than half a cent per kilowatt-hour through the 10-year study period.

Air Quality and Energy Footprint. Global climate change has received significant international attention in recent years. Two major sources of greenhouse gases that contribute to global climate change are electricity production and vehicle emissions. In North Carolina, 40% of greenhouse gas emissions result from electricity production (coal-fired power generators), and another 40% result from vehicle emissions. There is room for improvement in both of these categories. For example, in 2006, North Carolinians drove 11,600 miles per capita on average, compared to the national rate of 10,000 miles per capita. Reducing the number of miles we drive, developing cleaner fuels, and acquiring more efficient vehicles are all priorities for reducing the 40% share of greenhouse gas emissions contributed by the transportation sector. University research can provide some of those answers.

Reducing our energy footprint and developing renewable sources of energy are not just good projects; they are the law of the state. During the 2007 legislative session, lawmakers required electricity producers by 2021 to generate 12.5% of their power from new renewable sources and energy-efficiency. Where this production will come from and what technology development will be required to meet these requirements is uncertain. The 2007 legislation also requires all state entities (including the UNC system) to reduce their energy consumption 20% by 2010 and 30% by 2015 (from their 2003-04 baselines).²⁴

Water Quality and Quantity. North Carolina has more than 700 river segments (totaling nearly 3,000 miles) that are considered impaired by pollutants and unable to support designated uses. According to EPA's 2000 Water Quality Inventory for North Carolina, 34% of our wetlands are

²⁴ N.C.G.S. 143-64.12

considered impaired, primarily as a result of conventional agricultural practices and urban development.

In terms of water *quantity*, drinkable water demand is expected to grow 36% in North Carolina by 2030. It will take more than \$17 billion in new water infrastructure at the local government level to meet the demand for drinking water and sewer-system expansions. The single largest use of water in the state is steam generation for electricity. Without sufficient water, electricity cannot be generated. With two severe droughts striking our state in the past decade, water availability is a pressing state concern.

The loss of undeveloped land threatens the environment through the destruction of stream and forest ecosystems, degrades drinking water quality, degrades air quality, results in the loss of wildlife habitat, and diminishes recreational opportunities. Globally, an area the size of North Carolina is lost to deforestation each year. That contributes approximately 1.6 billion metric tons of carbon into the atmosphere each year (compared to about 6 billion metric tons from burning fossil fuels). North Carolina is developing more than 100,000 acres a year, making it the fifth-leading state in the nation in losing open land to development. This is the equivalent of removing a Winston-Salem-High Point metro area each year from the state's open space. If the UNC system were to help determine solutions to these challenges, it would be a valuable contribution.

Environmental Engagement on Campuses. Because of the nature of university life, the 17 institutions of the UNC system are the single-largest consumer of electricity and water in the state, spending more than \$13 million a *month* in FY05-06. Universities are communities of tens of thousands of students who live, eat, and study in dorms, labs, libraries, and classrooms 24 hours a day for most of the year. The result is that the UNC system represents between 70% to 80% of the state government's demand for water and electricity.²⁵ While this is a significant number, it also is a significant opportunity. Among all the problems facing the state that UNC should address, this is the one of which University leadership is most in control and in which the student bodies on campuses can most directly engage.

Environmental engagement and activism on campuses across the country has not been as intense as it is now since the 1960s. Students are looking for opportunities to address global climate change and are willing to work and contribute to solutions, especially on their own campuses. Students at UNC-Chapel Hill, UNC Asheville, and Appalachian State University have voted overwhelmingly to tax themselves (through student fees) for environmental programs on their campuses. For example, in March 2007, a second referendum to reaffirm a \$5-per-semester fee for renewable energy projects passed with more than 90% approval at ASU. Those funds have been used in part to provide biodiesel pumps for the campus bus system and for a solar-thermal hot water system for the Student Union. Examples such as these abound across the nation. Harnessing this energy among our students should be a top University priority.

UNC institutions also are blessed with a broad array of programs and talent focused on environmental and energy issues. While much of the ongoing research occurs in isolated pockets within campuses, the intellectual capital exists to address the state's pressing energy and

²⁵ N.C. Dept. of Administration, State Energy Office, Utility Savings Initiative Energy Use Spreadsheet, 2006

environmental problems. Coordination at the system level is needed to focus this expertise in a deliberative and effective manner.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

4.6.1. UNC should embrace environmental sustainability as a core value among its institutions.

Suggested Strategies:

- Take control of our environmental footprint through:
 - Calculating the carbon footprint of each campus and the University as a whole.
 - Creating an inventory of the research, projects, programs, and outreach underway at UNC campuses. Use that information to reduce the University's carbon footprint, expand environmental literacy, and address environmental concerns on UNC campuses and within the state's communities.
 - Establishing University green house gas and utilities reduction targets, and coordinating a system-wide effort to meet those goals.
 - Training faculty and staff about sustainable practices applicable to their fields of work.
- Use the "triple bottom line" of economic, environmental, and social success at all UNC institutions as a barometer for university success.
- Consider allowing universities to keep the savings that they attain from implementing energy conservation measures. That would act as an incentive for sustainable upgrades and as seed money for future environmental improvements.
- Use cost-effective life cycle analysis in the design and engineering of all new construction, as is prescribed in state statute.
- Integrate sustainable design components early in the design process to make high-performance building techniques integral to building plans, and streamline building construction implementation so that the time from design to actual construction is reduced and the pressure to "value engineer" sustainable aspects out of construction is eliminated.
- Transition UNC's motor pool to a fleet composed of flex fuel, hybrid, and alternative fuel vehicles, and install flex fuel pumps at each UNC institution.
- Reduce travel-related fuel-consumption per mile traveled by employees and students of the university.
- Use smart growth practices in the expansion of our campuses.

- Purchase products that perform as well or better than Energy Star-certified products when available.
- Establish environmentally preferred purchasing policy (EPP) standards at UNC campuses.
- Brand programs, research, instruction, and outreach that address issues of environmental sustainability (e.g., UNC GREEN programs).
- Increase water conservation measures at all UNC institutions.

4.6.2. UNC should leverage its existing research expertise to address critical environmental and energy issues.

Suggested Strategies:

- Coordinate programs, research, and outreach of environmental centers and institutes system-wide.
- Connect extension efforts (at NCSU and NCA&T) across the state with experts from across the system, particularly those not at the institutions known for their extension programs.
- Create a Scholars Council on Energy and the Environment that will serve as the brain trust for system-level environmental focus, action, collaboration, and research.
- Bring economic benefits to rural and economically distressed areas through the development of energy and environmental business opportunities.
- Increase the amount of research being done in the areas of water, air, and environmental quality, along with alternative fuel and energy production.

4.6.3. UNC should increase community awareness of environmental and sustainability issues.

Suggested Strategies:

- Educate current K-12 teachers, as well as current education majors, on how to integrate ecological and environmental components into science and non-natural science areas of instruction in the public schools.
- Incorporate environmental literacy into undergraduate curricula.
- Provide community workshops on sustainability.
- Develop new sustainable leadership training programs and expand current education options for business, governmental, and community leaders in forums such as the Center for Sustainable Enterprise and the Institute for the Environment at UNC-Chapel Hill.

4.7. Our University’s Outreach and Engagement

Major Finding: UNC should become more directly engaged with and connected to the people of North Carolina, its regions, and our state as a whole.

People at the Community Listening Forums and respondents to the UNC Tomorrow survey clearly indicated a desire for a closer connection to the University. They want to be able to access instruction and research on main campuses, on satellite campuses, through distance education, through the Internet, and through extension mechanisms. They want UNC faculty and staff to be involved in their educational and vocational lives. They asked UNC to assist in solving their pressing community issues and in stimulating economic and community development. They asked for more collaborative town-gown relationships in communities where UNC institutions are located. Across the state, they asked for deeper engagement by UNC directly with — and in — their communities.

UNC Tomorrow survey respondents indicated a strong desire to see UNC increase the focus of its efforts and resources in a number of ways that would positively impact their communities.

Table 4: Services North Carolinians want UNC to Maintain or Increase

Rank Order	Service	Increase	Remain Same	Decrease
1	Distance/online education	72%	25%	3%
2	Programs and technical assistance for K-12 teachers	67%	31%	2%
3	Professional development	63%	36%	1%
4	Continuing adult classroom education	57%	41%	2%
5	Research and data sharing with your community	56%	43%	2%
6	Medical care or health-care advice	56%	41%	3%
7	Leadership training	54%	43%	4%
8	Economic development assistance	49%	47%	4%
9	Business start-up assistance	45%	51%	4%
10	Social advising, community advising, and technical assistance	45%	51%	4%
11	State-level assistance with public policy development and problem-solving	45%	51%	5%

Responding to those needs requires greater engagement and outreach by UNC, especially among its faculty. On many UNC campuses, however, the public-service component of the University’s mission receives much less attention from the faculty than do teaching and research. Public-service activities are considered by some to not add to the status and prestige of faculty members, academic units, or universities. Both the internal reward systems and the external status hierarchies work against faculty members spending significant portions of their time in public service, even though it is one prong of UNC’s three-pronged mission of teaching, research and scholarship, and public service.

The UNC campuses are seen by many as a unique repository of talent that can help solve major societal and state-specific problems. Greater collaboration across campuses is seen as a way of harnessing that talent in innovative ways. Unfortunately, there is a lack of knowledge among the general public about ongoing UNC efforts and initiatives that are designed to respond to the challenges expressed by the public during the UNC Tomorrow Initiative. When asked whether they were satisfied with a broad array of ongoing engagement activities, fully one-third of UNC Tomorrow survey respondents could not give an opinion on *any* of the 13 engagement activities listed. For those who did offer an opinion, anywhere from 40% to 72% replied with “don’t know,” clearly indicating a lack of informed awareness about these engagement activities. UNC should address this lack of public awareness.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

4.7.1. UNC should apply, translate, and communicate research and scholarship to broader audiences.

Suggested Strategies:

- Align campus programs with regional needs as the driver for applying the skills and resources of University faculty.
- Develop stronger partnerships with business, industry, and government agencies and nonprofits.
- Encourage business partners to support new campus efforts to effect change.
- Increase inter-institutional collaborations that readily respond to the needs of the regions and the state through academic programs, library support, and research.
- Establish Web-based portals to serve as the entry point for information access.
- Enhance and streamline dissemination and commercialization of UNC technologies and discoveries (“tech transfer”).
- Examine whether NCSU and NCA&T extension services, SBTDC, UNC-Chapel Hill School of Government, and AHEC provide models for offering other University services and resources.

4.7.2. UNC should develop a strategic plan for scholarly public service on each campus that is detailed and specific in definition and scope.

Suggested Strategies:

- UNC leadership should underscore the importance of public service among faculty in order to provide leadership in this area.
- Ask campuses to consider standards in their faculty reward, promotion, and tenure policies that encourage and reward public service by faculty (recognizing that some disciplines lend themselves more naturally to public service and community involvement than others).
- Link to the strategic needs of each region, motivate faculty to engage with the community, and create a plan to fund public service.
- Ensure that components of the strategic plan for public service do not become “unfunded mandates” imposed on faculty but instead are activities for which faculty are given the appropriate resources (such as release time), compensation, and recognition.

4.7.3. UNC should create a mechanism for applying research and scholarship to address significant regional and statewide issues.

Suggested Strategies:

- Use the Scholars Council as a model to work on solving issues/challenges facing our state (example: sustainability).
- Establish “virtual groups” that work inter-institutionally and are organized by fields of expertise.
- Establish a system-wide structure for inter-institutional faculty collaboration (either within a discipline or multi-disciplinary) with appropriate peer review focused on significant applied public-policy issues facing the state.

4.7.4. UNC should communicate its resources and expertise to wider audiences.

Suggested Strategies:

- Develop mechanisms by which innovations, research, and scholarship are communicated to interested stakeholder groups and broader constituencies.
- Create easy “portals” by which to access UNC expertise and resources.
- Institutionalize mechanisms for UNC-community interaction.
- Develop internal mechanisms for identifying and disseminating related faculty research, scholarship, and programs among different institutions, departments, and disciplines.

Section 5: What changes should be made within UNC to respond to the needs of our state?

In order to meet the external challenges identified in this report, UNC and its constituent institutions must transform themselves internally to be more nimble, efficient, and responsive. In this transformation, UNC must remain committed to its three-pronged mission of teaching, research and scholarship, and public service and respond in ways that are consistent with those goals. Straying from that mission would dilute UNC's ability to serve our state in the ways that only it, as our state's public University, can. UNC must also remain mindful of its responsibility to be a good steward of the generous support given to it by the taxpayers of North Carolina through their elected representatives and be aware that its resources, while considerable, are not unlimited. Therefore, they must be wisely prioritized and maximized. The University must balance nimbleness and responsiveness with due diligence and a state-wide perspective in order to adopt the best options for meeting North Carolina's needs. UNC must remain committed to academic freedom for its faculty, staff, and students in the execution of its mission. Finally, UNC must remain committed to excellence and continue to strengthen the quality of its teaching, research and scholarship, and public service, for it is through achieving the highest degree of excellence in the fulfillment of its mission that UNC best serves our state and its people.

To this end, the Commission encourages UNC to consider the following recommendations as it develops its plans to respond to the challenges facing North Carolina.

RECOMMENDATIONS AND SUGGESTED STRATEGIES

5.1. UNC should examine the missions of its 17 constituent institutions in light of state and regional needs from a "system" perspective so that the programs and resources of all institutions serve the state and its regions in a manner that complements each other, maximizes resources, and avoids unnecessary duplication.

Suggested Strategies:

- The Board of Governors should review and reaffirm or refine the mission of the University of North Carolina as part of this process.
- The Board of Governors and the President should establish clear guidelines and parameters for the review of campus missions.
- The mission review should include a substantive review by the campuses and by UNC of how each institution and the system of institutions are serving the needs of the state and its regions and what adjustments are needed to better serve those needs.

5.2. UNC should review the academic planning process to ensure that the needs of North Carolina are fully considered in establishing and discontinuing degree programs.

Suggested Strategies:

- Explore ways to streamline the academic planning process so that UNC can respond more nimbly to external needs.
- Campuses should review their academic planning processes in order to be more efficient and more responsive to external needs.
- Conduct periodic system-level reviews of regional and statewide trends to ensure UNC remains responsive to these needs.
- Utilize expert teams where appropriate to assess academic program needs across the system for meeting state needs.
- Integrate the availability of online and distance degree programs into the consideration of whether there is program duplication.
- Eliminate unnecessary duplication of programs where possible.
- Consider whether Carnegie Foundation Classifications should continue to impact funding and degree-establishment priorities or whether new approaches should be developed.

5.3. UNC should lead the campuses in a refinement and adjustment of the tenure, promotion, and incentive system to place greater value on faculty involvement and engagement in applied research and outreach that will enhance the state's competitiveness without decreasing support for teaching, basic research and scholarship.

Suggested Strategies:

- Work with the UNC Faculty Assembly to provide leadership to create a more balanced incentive and reward structure for University faculty that appropriately values achievements in teaching, research and scholarship, and public service.
- Encourage faculty to address important societal issues, and reward them for doing that work well.
- Create incentives for faculty to engage in applied research, scholarship, and public service.
- Continue to support and reward basic research, theoretical scholarship, and creative activities.
- Make appropriate University faculty more accessible to small business owners, nonprofit organizations, K-12 schools, and community groups.
- Continue to support the use of the tenure process as a way to validate that faculty candidates are highly qualified experts in their fields.

5.4. UNC should prepare for wide-scale faculty retirement and should increase efforts to recruit and retain high-quality faculty.²⁶

Suggested Strategies:

- Develop strategies to enhance faculty recruitment and retention.

²⁶ According to UNC General Administration, as of October 2006, one out of every five faculty member in the UNC system is over the age of 61. Almost 37% are over the age of 55, 44% are between the ages of 40 and 54, and only 19% are under the age of 40.

- Take advantage of the impending retirement wave as an opportunity to increase racial, ethnic, and gender diversity among faculty at all UNC institutions.
- Develop collaborative initiatives among UNC campuses to enhance programs that increase the pool of doctoral graduates for the professorate, especially in high-need areas.
- Enhance professional development programs for faculty (e.g., leadership, grant writing, technology utilization, and online course development).
- Work to have fully competitive faculty compensation and benefits.
- Improve research and scholarship capabilities through improvements to laboratory facilities, equipment, library resources, graduate student support (such as tuition remission funding), and professional support staff.

5.5. UNC should increase efforts to attract and retain high-quality staff at all levels.

Suggested Strategies:

- Recognize that high-quality services to students provided by UNC staff (career counselors, academic advisors, student health and mental health professionals, campus safety officers, and others) are essential to academic achievement.
- Increase accommodations for staff and faculty with disabilities.
- Work to have fully competitive staff compensation and benefits.

5.6. UNC should continue to seek efficient use of available resources in the fulfillment of its mission.²⁷

Suggested Strategies:

- Continue to build on the President’s PACE (President’s Advisory Committee on Efficiency and Effectiveness) initiative to improve UNC’s efficiency and eliminate duplication where possible.
- Maximize utilization of existing facilities and infrastructure.
- Facilitate inter-institutional collaborations that achieve economies-of-scale cost-savings, such as digitizing library resources and sharing digital resources across the system.
- Where appropriate, build on and enhance existing programs before creating new ones.
- Where possible, reprioritize and reallocate existing resources to meet demands before seeking new resources.
- Fully utilize the “human capital” resources of alumni, who can serve in such capacities as campus recruiters, student mentors, and guest speakers.

5.7. UNC should encourage and facilitate interdisciplinary and inter-institutional collaboration among its institutions

²⁷ “In the fulfillment of this mission, the university shall seek an efficient use of available resources to ensure the highest quality in its service to the citizens of the State.” N.C.G.S. 116-1(b)

Suggested Strategies:

- Streamline and make consistent administrative functions such as grant administration and accounting systems.
- Develop incentives to reward interdisciplinary and inter-institutional collaborations.
- Explore aligning the calculation of tuition charges for distance education and site-based courses and programs.
- Improve operating effectiveness of internal controls, procedures, and technologies to facilitate a more efficient work environment within and across the UNC system.

5.8. UNC should continue efforts to establish accountability and performance measures that ensure and demonstrate transparently its success in carrying out its missions.

Suggested Strategies:

- UNC should proceed with the implementation of the Accountability Plan and Performance Measures approved by the Board of Governors.
- UNC should participate and be a leader in the national dialogue regarding accountability, transparency, and assessment, as it has been in the development of the national Voluntary Accountability System.
- UNC should build on its exemplary data system to link with other educational systems in the state and with employment tracking systems.

Section 6: What are the next steps?

UNC is committed not just to *learning* what challenges face North Carolina both now and in the future — it is committed to *meeting* these challenges. Upon receipt of the UNC Tomorrow Commission’s report, the UNC Board of Governors and President Bowles are committed to working with UNC institutions, affiliated entities, and General Administration to develop specific plans for how UNC will respond to the Commission’s recommendations. Some of the challenges can be met by UNC and its constituent institutions working together, while others will require further development of existing partnerships. Still others will require new partners. Some can be addressed relatively quickly, while others will require a longer-term strategy.

The University has a long-range planning process that has been on hold awaiting the findings and recommendations of the Commission. With the completion of the Commission’s work, the Board of Governors and the President will initiate a review of the planning process as recommended by the Commission, with the goal of addressing as many of the recommendations as feasible in that process. That review will be done in consultation with UNC General Administration, the Chancellors, and the campuses. That revised long-range planning process, recommended by the President and approved by the Board, will provide the guidelines for the response phase of the UNC Tomorrow Initiative. Those guidelines will provide the framework for the campuses’ responses to the Commission’s recommendations and for the integration of the campuses’ responses into a new long-range plan that the President will recommend for the Board of Governors’ consideration. This new plan will be distinguished from prior plans by the inclusion of clear timelines, costs, assignment of responsibilities, clear levels of accountability, and prioritization.

In developing responses to the challenges facing our state, faculty involvement — indeed, enthusiastic support — is needed to effect meaningful transformation within UNC. Campuses will be encouraged to involve faculty in developing their response plans. Similarly, students and staff should also be involved.

UNC must also reach out to its K-12, higher education, and other partners to fully engage them in the work of transforming how we can meet the needs of the state together.

Finally, to effectively respond to the needs of North Carolina both now and in the future, UNC must remain committed to maintaining and increasing high academic standards and the quality of its degree programs. Given that UNC’s primary mission is teaching, graduating well-educated students who are fully prepared to be personally and professionally successful in the 21st century is perhaps UNC’s strongest form of public engagement and service to our state.