May 3, 2004

MEMORANDUM

TO: Committee on Educational Planning, Policies, and Programs
Chairman Wilson
Vice Chairman Aldridge

FROM: Alan Mabe

SUBJECT: Meeting of the Committee Thursday, May 13, 2004

FOR THE COMMITTEE ON EDUCATIONAL PLANNING, POLICIES, AND PROGRAMS MEETING

Chairman Gilchrist has asked me to notify you that the next meeting of the Committee on Educational Planning, Policies, and Programs is scheduled for **Thursday, May 13, 2004, in the Executive Conference Room here in the General Administration** Building, beginning at **1:00.**

There will be a Joint Meeting of the Committee on Educational Planning, Policies, and Programs, the Committee on Health Affairs, and the Committee on the Future of Nursing: UNC's Role in Meeting the Demand beginning at **2:00 p.m.** When this joint meeting concludes, we will continue the meeting of the Committee on Educational Planning, Policies, and Programs, if needed.

The tentative agenda for these meetings is as follows:

Meeting of the Committee on Educational Planning, Policies, and Programs

1. Approval of the Minutes of the Meetings on March 18, 2004 (vote)

2. Administrative Action Items (*action by consent*)

Intellectual Capital Formation—Consent Agenda

Request to discontinue the following programs:
- Post Baccalaureate Professional degree programs at North Carolina State University
  - Aerospace Engineering
  - Chemical Engineering
  - Civil Engineering
  - Electrical Engineering
  - Material Science and Engineering
  - Nuclear Engineering
  - Mechanical Engineering
  - Nuclear Engineering
- Master of Immunology at North Carolina State University
- Bachelor of Science in Clinical Laboratory Science at University of North Carolina at Wilmington

Request for authorization to establish the following baccalaureate degree program:
- Bachelor of Science in Nursing at Fayetteville State University
- Bachelor of Arts in Contemporary European Studies at the University of North Carolina at Chapel Hill

Request for authorization to establish the following master's degree programs:
- Master of Arts in Birth through Kindergarten Education at East Carolina University
- Master of Arts in Teaching at the University of North Carolina at Pembroke
- Master of Social Work at the University of North Carolina at Wilmington

Request for authorization to plan the following doctoral programs:
- Doctor of Philosophy in Health Services Research at the University of North Carolina at Charlotte

Intellectual Capital Formation
3. Biennial Distance Learning Report—Dr. Sadler (vote)

Accountability
4. Report on Faculty Teaching Workload—Dr. Mabe, Mr. Fry (information)

Other
5. UNC in Washington program—Dr. Kanoy, Mr. Atkins (information)

JOINT MEETING OF THE COMMITTEE ON EDUCATIONAL PLANNING, POLICIES, AND PROGRAMS, THE COMMITTEE ON HEALTH AFFAIRS, AND THE COMMITTEE ON THE FUTURE OF NURSING: UNC'S ROLE IN MEETING THE DEMAND

Intellectual Capital Formation

6. Report on Primary Care Medical Education Plans: 2004 Update—Dr. Bacon (vote)

7. Report on the Task Force on the North Carolina Nursing Workforce—Dr. DeFriese (information)

8. Report on Plans to Increase Mid-Level Primary Health Care Providers: 2004 Update—Dr. Mabe (vote)

CONTINUATION OF THE MEETING OF THE COMMITTEE ON EDUCATIONAL PLANNING, POLICIES, AND PROGRAMS
Discussion of any of the Committee's agenda items not covered prior to the Joint Meeting.

ACTION ITEMS FOR THE BOARD OF GOVERNORS MEETING

From May Meeting (5/13/04)

If approved by the Committee on Educational Planning, Policies, and Programs at its meeting on May 13, the items on the Consent Agenda, plus items 3,6, and 8 will be presented to the Board for its consideration at its meeting on May 14, 2004.

Request for Authorization to Discontinue the Bachelor of Science in Clinical Laboratory Science at The University of North Carolina at Wilmington

Requested Action

The University of North Carolina at Wilmington requests permission to discontinue the Bachelor of Science in Clinical Laboratory Science (26.0101).

Rationale

The program was established in 1972, but, despite the need for graduates of such programs, local hospitals have cut back on their education mission and the resources to support the mission, eliminating clinical internships. Enrollment has been low for the past two years, and as of June 2000, UNCW is no longer accepting students. UNCW students planning a career in the field of clinical laboratory science will be able to pursue a B.S. in Biology with a Preclinical Laboratory Science option.

Recommendation

It is recommended that the Board of Governors approve the request to discontinue the Bachelor of Science in Clinical Laboratory Science at The University of North Carolina at Wilmington.

Request for Authorization to Establish a Bachelor of Science Degree in Nursing at Fayetteville State University

Introduction

Fayetteville State University notified the Office of the President of its intent to plan a Bachelor of Science degree in Nursing (CIP: 51.601) in September 2003.

Program Description

The Department of Nursing at Fayetteville State University is proposing to offer a generic baccalaureate degree in nursing. FSU currently offers an RN-to-BSN program as part of a consortium with UNCP and several community colleges in the region. This proposed program is expected to promote the development of professional nurses who are committed to making sound clinical decisions in providing high-quality nursing care to diverse populations in a variety of health-care settings. Upon completion of the program, graduates will be expected to possess knowledge, attitudes, values, psychomotor skills, and behaviors that define professional nursing. Graduates will also be expected to possess the knowledge base appropriate for graduate study. The proposed BSN will require 127 semester credit hours of course work, including 31 hours in the University College core, which provides a strong liberal-arts foundation, 32 hours in science courses (15 of which meet University core requirements), and 64 hours in nursing, including required and elective courses. The educational objectives of the proposed Bachelor of Science in Nursing are consistent with the mission of FSU, the standards of the National League for Nursing Accrediting Commission; the Commission on Collegiate Nursing Education; and the laws, rules, and standards of the North Carolina Board of Nursing.

The BSN program will help relieve the shortage of professional nurses in the region, which includes medically underserved and health-care professional shortage areas. Studies have suggested that minority health professionals are likely to practice in areas of health-care shortages and in areas with high racial and ethnic populations. While open to a diverse student population, FSU, which serves students from medically underserved areas in the state, from rural and poor counties, and from the military, is well positioned to address and remove these barriers, based on its long history of meeting the educational needs of persons of color. In southeastern North Carolina, the need for RNs with the baccalaureate degree is great. Of particular significance is the close proximity of two major medical facilities serving military personnel, military dependents, and veterans, Womack Army Hospital and the Veterans Administration Hospital. Both prefer and target the hiring of baccalaureate nurses. Preliminary discussion with Fort Bragg has indicated a desire to have enlisted personnel participate once the program is accredited.

The proposed generic nursing program is one of FSU's top academic priorities and the administration has made a major commitment of its resources to the program and is committed to seeking accreditation from both the National League for Nursing Accrediting Commission and the Commission on Collegiate Nursing Education. While the program expects to start with 30 students, its longer-term goal is to enroll 125 upper-division majors and graduate 50-60 per year.

Resources
FSU has funded an additional five faculty positions and a new departmental chair position in support of the program and has committed resources to meet facilities needs. The regional AHEC is assisting with clinical sites and library resources.

Recommendation
With the understanding that adequate faculty will he hired to meet accreditation requirements and that adequate clinical sites will be secured and approved by the NC Board of Nursing, it is recommended that the Board of Governors approve the request to establish a Bachelor of Science degree in Nursing at Fayetteville State University effective May 2005.

Request for Authorization to Establish a Bachelor of Arts in Contemporary European Studies at The University of North Carolina at Chapel Hill

Introduction

The University of North Carolina at Chapel Hill notified the Office of the President of its intent to plan a Bachelor of Arts degree in Contemporary European Studies (05.01.03) in October 2003.

Program Description

The proposed Bachelor of Arts in Contemporary European Studies will build on UNC Chapel Hill's strength in European Studies. The degree program will be housed in The Center for European Studies; it has been rated as one of the top three centers for the study of Europe in the nation. The Center funds research on what it terms the "new Europe," and it seeks to disseminate knowledge on Europe in the Bachelors in Contemporary European Studies by engaging undergraduates in the study of Europe through a combination of coursework, use of European languages, and interactions with a community of Europeanist faculty and graduate students. Students majoring in Contemporary European Studies will have a primary major in an academic department; the curriculum is designed as a second major for students who wish to deepen their understanding of the issues and events currently shaping Europe.

The goal of the Bachelor of Arts in Contemporary European Studies is to provide a structured undergraduate program on the politics, economics, society, and culture of Europe. The Contemporary European Studies curriculum focuses on three thematic groups: European integration, European history and culture, and European arts and literature. Each of these themes is interdisciplinary and builds on courses in the Social Sciences, Humanities, and modern languages. Majors are required to complete six semesters of a European language, so that they can operate effectively when abroad and conduct undergraduate research in the second language. Students will also be encouraged to study abroad or participate in a series of Languages Across the Curriculum courses. Thus, students will study contemporary Europe in an inter-disciplinary framework using the appropriate language. Students graduating from the Contemporary European Studies program will be prepared to function effectively in transatlantic contexts and will be well-prepared to continue graduate studies. (UNC Chapel Hill also houses the Transatlantic Masters Program in the Center for European Studies).

Program Need

The Bachelors of Arts in Contemporary European Studies applies the principles of the new undergraduate curriculum that will be implemented at UNC Chapel Hill in Fall 2006. The Contemporary European Studies program includes key "distributive," "integrative," and "cluster" courses as outlined in the new undergraduate curriculum design. Moreover, the proposed major fits the institutional mission of UNC Chapel Hill; it builds on the institution's strength in European languages and key disciplines such as history, political science, sociology, and anthropology. The Bachelor of Arts in Contemporary European Studies integrates undergraduate study with faculty, graduate student research, and encourages communication and involvement among teacher-researchers in the Center for European Studies.

There are numerous reasons for North Carolinians, particularly future leaders, to be educated on contemporary Europe. The European Union is the United States' largest trading partner. US trade with EU in 2001 exceeded $537 billion, and EU is the largest foreign investor in North Carolina with $20.8 billion invested here in 2000. Nearly a quarter of a million jobs in North Carolina (2001) depend on trade with EU. Most North Carolinians, however, do not possess current knowledge of contemporary European nations. No other UNC university offers a major

in European Studies; only 22 schools in the United States offer a major in European Studies. This would be one of the first degree programs in contemporary European studies.

Extrapolating from majors in three other international programs, there is a projection that there will be 40 majors in four years.

Resources

The Center for European Studies has been federally funded through 2006, and they have funded the development of seven new courses on contemporary European issues, in the past year. The Center is also a European Union Center funded by the European Commission. It is estimated that that there are about 250 faculty teaching and researching on modern Europe at UNC Chapel Hill. The Center employs video-conferencing and web resources to share special speakers nationally. The Center for European Studies is one of several international programs scheduled to move into a new campus Global Education building which will include a video-conferencing facility. The proposal estimates that resources will be sufficient for the major.

Recommendation

It is recommended that the Board of Governors approve the request to establish a Bachelor of Arts in Contemporary European Studies effective August 2004.

University of North Carolina at Charlotte
Request to Plan a Doctoral Program in Health Services Research

Introduction

The University of North Carolina at Charlotte requests approval to plan a doctoral program in Health Services Research (CIP: 51.2201).

Program Description

Ph.D. program in Health Services Research (HSR) at UNC Charlotte. Considerable strengths in the newly transformed College – through the combined efforts of three academic units and four departments – are available to support the development of a strong interdepartmental Ph.D. program in Health Services Research. Faculty members in the School of Nursing, the Department of Health Behavior and Administration, and the Department of Social Work who are engaged in health services research will serve as doctoral program faculty. The proposed program follows directly from the College's strategic plan submitted to Interim Provost Walcott on October 2, 2002. It connects with existing programs at the institution and in the community, and is consistent with national priorities in health. Designed to meet the rising need for competent health service researchers, the program is thematically guided by its focus on outcomes research. The focus of the proposed Ph.D. program in Health Services Research is the development and dissemination of new knowledge to improve the practice and delivery of health and human services through outcomes research on the effectiveness, quality, and organization of health care delivery systems.

Health Services Research is the field of scientific investigation that studies how finance systems, health technologies, organizational structures and processes, personal behaviors, and social factors affect access to health care, the quality and cost of health care, and ultimately societal health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations (Mirvis, 2000). The field addresses the range of factors that influences the health outcomes experienced by individuals and by populations. Health Services Research is an interdisciplinary field that draws on biostatistics, epidemiology, sociology, social work, health economics, medicine, nursing, engineering, and management. Its national importance is recognized by providers, administrators, employers, insurers, and state and national policymakers who are seeking solutions to concerns about the cost of care, the quality of care, and the health status of all Americans (Mirvis, 2000; National Research Council, 1994; Stryer, Tunis, Hubbard, and Clancy, 2000).

Health Services Research has expanded our understanding of organizational and financial factors that affect access to care; the appropriateness of services as well as their quality and cost; and patient outcomes. It has uncovered under-use, overuse, and misuse of health care practices; and geographic and socioeconomic variation in the accessibility, delivery, and utilization of health care services. Outcomes research has altered the culture of

clinical practice and health care research by changing how we assess the end results of health care services.

Program Review

The review process for requests to plan is designed to determine if the proposal is developed to the stage appropriate for taking to the Graduate Council and if so what are the issues that may need further attention. Proposals to plan doctoral programs are reviewed internally. The concerns from the reviewers were summarized in a letter to the Chancellor prior to the presentation to the Graduate Council. That summary follows:

One concern expressed was that only one area, nursing, was involved in direct health care, while many of the Health Services Research programs are associated with medical schools or medical centers that would have multiple health care programs. This was related to a concern about developing a critical mass of health services research at UNCC. Obviously, by involving collaborative arrangements with Carolinas Medical Center and Presbyterian Health Care/Novant you are attempting to address this. It is an area that likely will need continuing attention as the proposal is developed.

One reviewer was of the opinion that UNC CH's program is interdisciplinary and that the contrast between the two on this dimension may not be as great as stated in the proposal. If this reviewer is right, then the issue of non-duplication may be met not so much by establishing uniqueness as by showing that a second program in North Carolina can be justified. In any case, this is another area that may require additional attention.

This reviewer also wanted more information about the prospects for faculty positions in this field and perhaps a more detailed account of where the graduates could expect to go.

Graduate Council

The Graduate Council had, as a basis for its consideration, the proposal to plan the program, the summary letter to the Chancellor, and a presentation to the Council by representatives of the program. In addition to the issues raised previously, the following concerns were expressed by Council members: The issue of doing this research apart from a teaching hospital setting was raised as was the issue touched on by the reviewers of the importance of being associated with direct medical services units.

Response

The representative pointed out that the most important data is to be found in very large data sets from a variety of sources that are available in the public domain. While the research is not directly dependent on being associated with direct health care, the program has worked our relationships with the major hospitals in the Charlotte area. UNCC has been tracking applications to Public Health Programs nationally and showed that less than 30% of those seek admission found slots.

Need for the Program

This is a relative new field but with a number of other programs already in existence. As health care move more and more evidence-based practice, large scale analysis of data will

become more and more important so positions will be opening both in health care, governmental agencies, health administration agencies, and universities.

Recommendation by the Graduate Council
After consideration of the issues raised by previous reviewers and Council members, the Graduate Council voted, without dissent, to recommend approval for UNCC to plan a doctoral program in Health Services Research.

Issues to Address in Planning
It will be helpful to provide amplification of the relationships with various hospitals and health care entities and how they will interact with the degree program. Some more targeted discussion of student demand and potential employment for the specific area of the degree program will help as well.

Recommendation
The Office of the President recommends that the Board of Governors approve the request from the University of North Carolina at Charlotte to plan a doctoral program in Health Services Research.

Approved to be Recommended for Planning to the Committee on Educational Planning, Policies, and Programs

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Senior Vice President Gretchen M. Bataille May 3, 2004

REPORT ON EXPANDING ACCESS TO HIGHER EDUCATION THROUGH STATE-FUNDED DISTANCE EDUCATION PROGRAMS

Submitted in response to North Carolina Session Laws 1998, chapter 212, section 11.7 of the North Carolina General Assembly

May 2004

Board of Governors

The University of North Carolina

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Preface

The 1998 legislation providing enrollment funding for UNC distance education requires submission of a biennial report that addresses the impact of these programs on access to higher education and the educational attainment levels of North Carolina residents. As with the two preceding biennial reports, this report provides substantial information that documents the growth of UNC distance education programs and their role in meeting the high priority education and economic development needs of the State.

The second biennial report, submitted in May 2002, recognized that some of the most effective documentation would be for General Assembly members to read verbatim comments from their constituents who have benefited from these programs. This third biennial report follows that example by providing a few representative quotes on the following two pages about UNC's distance education programs. Additionally, the printed information contained in this report is supplemented by a companion compact disc (CD) that will enable the viewer to see some distance education students and their learning environments and to hear their comments. The CD, which will be available from the UNC Office of the President, contains the following elements:

- A 25-minute video, ***Dreams to Degrees***, that contains an introduction by UNC President Molly Broad and four vignettes of distance education students who are earning their degrees from UNC constituent institutions. The filmed vignettes describe the educational experiences of:
  - A registered nurse who is obtaining her BS in Nursing degree at a distance from Winston-Salem State University;
  - Three teachers in Rutherford County who have earned their baccalaureate teaching degrees from an Appalachian State University program offered at a local community college and who are now working on their master's degrees in an ASU off-campus program;
  - A single working mother who is earning her baccalaureate degree through online courses offered by NC State University; and,
  - An information technology worker (Cisco) from Wilmington who is enrolled in an online master's program in Industrial Technology (computer networking concentration) offered by East Carolina University.

- A Powerpoint presentation that provides an overview of UNC distance education.

- Separate sections for each UNC constituent institution that offers distance education programs. Each institution describes its mission and goals in providing distance education and highlights major distance education emphases of the institution. Each UNC institution also provides an inventory of its currently authorized distance education degree programs and a statement on how it ensures quality assurance in distance education offerings. Many institutions' sections will also include student quotes (in addition to those presented on the following pages) as well as supplementary information such as Powerpoint presentations and video clips.

Quotes:

Speaking on behalf of the Greater Hickory Metropolitan area, we have been very pleased about our association with the folks from Appalachian State and the course offerings they have brought to our citizens who need and deserve access to a variety of programs. Our education attainment here in the Greater Hickory Metro is at or near the lowest level in the state. And, were it not for Appalachian and the efforts they're making, along with the efforts of Lenoir Rhyne College, Catawba Valley Community College, NC State and UNC-Charlotte, unfortunately I think that trend might continue. I know our continued association with Appalachian, as well as the other institutions, through course delivery at the Hickory Metro Higher Education Center will make a significant difference for the people in this area. **Rudy Wright, Mayor of Hickory, commenting on Appalachian State University site-based distance education programs.**

I had never taken an online course until this year, and I wasn't sure how effective it would be. Class discussions in a chatroom? A professor hundreds of miles from many of his students? How would we all communicate? But so far, I've been pleased with the quality of instruction and online interaction between the students. We challenge and are challenged every day. Moreover, the program brings in a diversity of mature students whose work and family commitments keep them off campus. **Student obtaining her distance education master's degree in Technical & Professional Communication from East Carolina University.**

I am a mother of three children who is graduating from ECSU. I have taken as many courses through distance learning as possible. The advantages of the courses are: being able to access courses 24/7, which makes it possible to work on course work when you can find time in your schedule; not having to find child care because you can work from home/work on courses; learning new computer skills; immediate feedback when taking tests and quizzes; being more cost effective because you don't have to spend money on food and gas associated with traveling to the campus…. The support from the technology support is phenomenal. I have gained tremendous knowledge and support from instructors in the technology support department. **Elizabeth City State University online course student.**

Students generally like online courses. Online courses are convenient, even if there is a lot of work involved in them… . As a faculty member, I enjoy online teaching…. As I plan my teaching for online courses, the planning makes me more aware of my teaching. I find myself planning more activities and since online courses are continually changing, I am constantly learning as well. **Fayetteville State University online class instructor.**

The online pursuit of my education has been interesting, intriguing, and challenging. It has allowed me the flexibility of scheduling my time and daily routines to meet all requirements. This process has required discipline to handle my 8-hour work schedule, family commitments, and excel in the online program. [The program] has proven to be multifaceted with chats, reference sources, projects, and tests. I have now come to the completion of my undergraduate studies. I am experiencing emotions of great

accomplishment and satisfaction having reached this goal. I can also say confidently with Aggie Pride, "you're never too old." **First graduate of N.C. A&T State University's online B.S. in Occupational Safety & Health program.**

I am a full time teacher in my first year. I not only had to adjust to working full time, I had to adjust to learning the curriculum and the everyday schedule of teaching. I have two children and I am the basketball/dance/gymnastics/guitar lessons/tae kwon do 'give somebody a ride' mom. That keeps me pretty busy when I am not at work. The Distance Learning class has been a blessing. I can do my work at home, at my convenience. The instructor and the technical guru have been able to answer all my questions on-line…. The weekly discussion with the classmates is quite interesting as you get everyone's viewpoints. If you were sitting in a classroom you may only hear one or two responses. I feel that I actually get more insight about the topics as everyone has to respond to the questions. **North Carolina State University teaching licensure student.**

I've been a participant in the writing program for about two years. I want you to know it provides exceptional instruction in addition to building a support structure for writers in the community. I have attended other writing programs not affiliated with UNCA in the past, but they just don't have the academic excellence that I've found in the Great Smokies program. Most of us are not able, because of jobs and family commitments, to attend daytime classes at the UNCA campus. I wish you could experience the high quality of instruction that Tommy Hays and his staff offer. There is nothing to replace it in Asheville. **Student in UNC-Asheville off-campus writing program.**

The on-line program has given me an opportunity to seek a quality education. Without this program, I would have been unable to obtain my BSN from Carolina. Due to the distance that I live from the campus, my family, and my current position as a registered nurse at a local hospital, my goal of obtaining my BSN from a highly acclaimed nursing program would have been impossible. The on-line program has certainly challenged me academically and exposed me to many experts in the field of nursing. The staff has been outstanding to work with. They are always accessible to the students. I feel that I have been very fortunate to have participated in this quality program. **UNC-Chapel Hill nursing student who lives and works in Princeton, North Carolina.**

I am a first-year lateral-entry teacher and the opportunity to take all my licensure courses online was too good to pass up. The online courses were very convenient for me and I like being able to work ahead in my classes. The coursework is appropriate and useful and pertains to what I am doing in the classroom. This is a great program and I appreciate all of the support I've been given. **Language Arts/Social Studies teacher in Morganton, after her first semester in the UNC-Charlotte online program.**

Just wanted to send you a note letting you know how much I enjoyed the Educational Psychology online class. What's more, taking an online course is very convenient for mothers with small children such as myself. I enjoyed the faculty member's outlook on things as well as teaching. **Teacher taking UNC-Pembroke online education courses to complete her certification**

Expanding Access to Higher Education Through State-Funded UNC Distance Education Programs

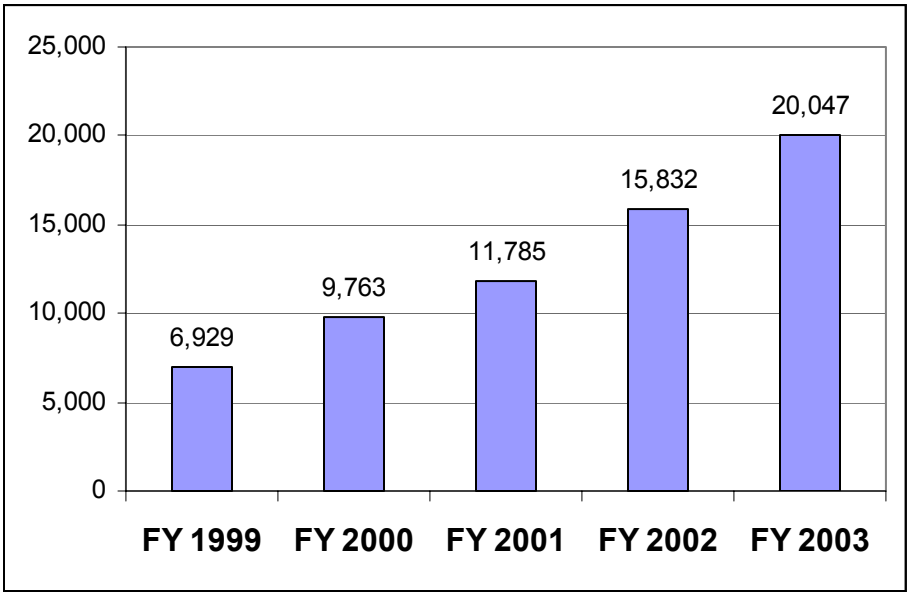
Executive Summary

- State funding for UNC off-campus (distance) education degree-credit instruction is achieving the intended legislative goal of expanding access to higher education opportunities for North Carolinians who otherwise would be unable to obtain an undergraduate degree, graduate degree, or licensure in a teaching specialty. High quality degree programs are being developed and offered throughout the state in subject areas that are responsive to the workforce and economic development needs of North Carolina.
- The unduplicated number of individuals enrolled in UNC distance education programs increased by 198 percent from FY 1999 to FY 2003—from 6,929 individuals to 20,047.
- Distance education course offerings increased 258 percent from fall 1998 (the first year distance education enrollment funding was provided) to fall 2003, from 412 course sections to 1,473.
- UNC constituent institutions offer 167 site-based degree programs in 53 North Carolina counties, including 83 degree programs taught at 28 North Carolina Community College campus locations. Other distance education sites include public school settings, Area Health Education Centers and other health care settings, UNC graduate centers, and North Carolina military bases.
- UNC online degree programs are rapidly increasing, growing from 6 online programs in spring 2000 to 67 online degree programs in spring 2004.
- In fall 2003, students who are 26 and older comprised 81.3 percent of distance education enrollments as compared to only 22.1 percent of regular term (on campus) enrollments. This indicates that UNC distance education programs are reaching non-traditional higher education audiences who otherwise would not have access to these programs.
- The UNC Office of the President's e-Learning Initiative is intended to increase the number of online "anytime, anywhere" courses and degree programs that can be accessed from any county in the state. Funding grants have supported faculty development, collaborative online courses and degree programs, and development of distance degree programs that are responsive to critical needs of the state. An e-Learning Policy Group has been established to address coordination issues.
- UNC constituent institutions ensure that they provide the same quality of instruction to distance education students as to on-campus students through a variety of assessment and evaluation procedures.
- Instructional salary costs continue to be the single greatest cost factor for both on-campus and distance education courses. When these costs are deducted from the total distance course cost, traditional "face to face" instruction is the least expensive per student FTE, followed by online instruction, and, third, streaming video instruction.

Increasing Access to Higher Education

In response to the enrollment funding provided by the General Assembly for UNC distance education programs, the number of students enrolled in these programs has increased significantly in recent years. Fall 2003 distance education-only enrollments increased from the previous fall's 8,473 to 9,884, a growth of 16.7 percent. In fall 2003, an additional 4,545 students enrolled in distance education courses while taking courses on-campus, for a total of 14,429 students enrolled in such courses that semester. Unduplicated headcount enrollments increased by more than 198 percent from Fiscal Year 1999 to Fiscal Year 2003—from 6,929 individuals to 20,047 (Figure 1). A comparable increase is expected for Fiscal Year 2004.

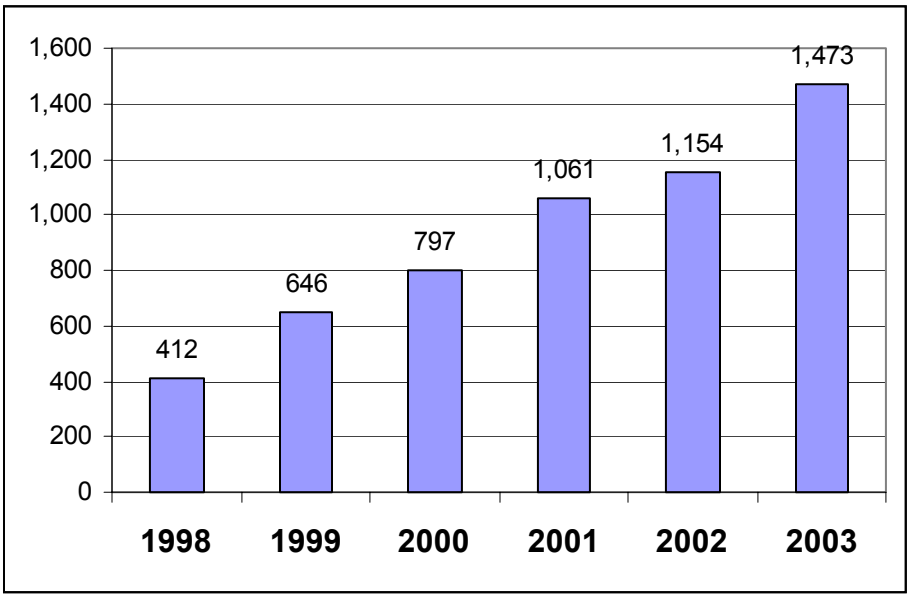
Figure 1. Growth in Unduplicated Headcount Enrollment in UNC Distance Education Programs, FY 1999 – FY 2003



[Note: Throughout this report, data generally will be presented for distance education instruction funded by the UNC enrollment funding model because this is the focus of the legislation mandating this report. UNC distance programs also enroll a number of individuals (4,014 individuals in FY 2003) for whom UNC does not receive distance education enrollment funding. Typically these are either non-NC residents receiving distance instruction out of state, or they are students enrolled in specially funded contract or customized distance programs that do not receive enrollment funding.]

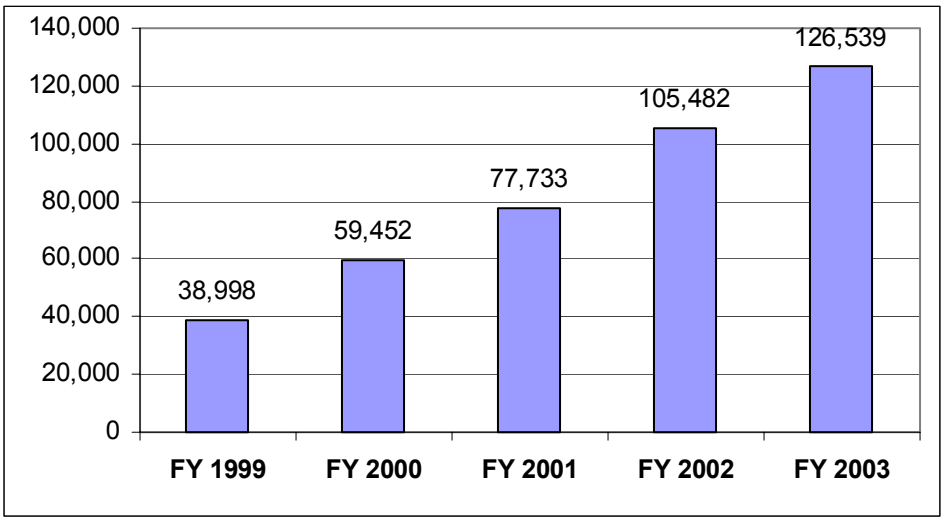
Annual growth in distance education can also be measured by the number of distance courses offered each semester. As Figure 2 illustrates, fall semester distance education courses increased from 412 in fall 1998 to 1,473 in fall 2003, an increase of 258 percent. [Note: Fall 2003 number may change slightly as data are updated from campus reports.]

Figure 2. Growth in Distance Education Course Sections: Fall 1998—Fall 2003



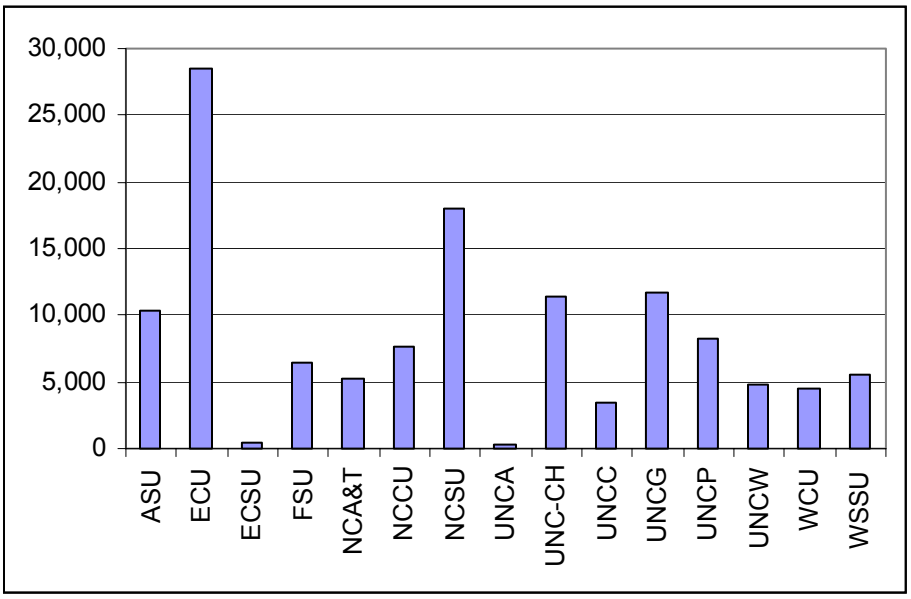
Another indication of growth in UNC distance education activity is the increase in student credit hours (SCHs) taught in each fiscal year. These SCHs increased by 224 percent from FY 1999 to FY 2003, from 38,998 to 126,539 SCHs (Figure 3).

Figure 3. Total UNC Funding Model Distance Education Student Credit Hours: FY 1999—FY 2003



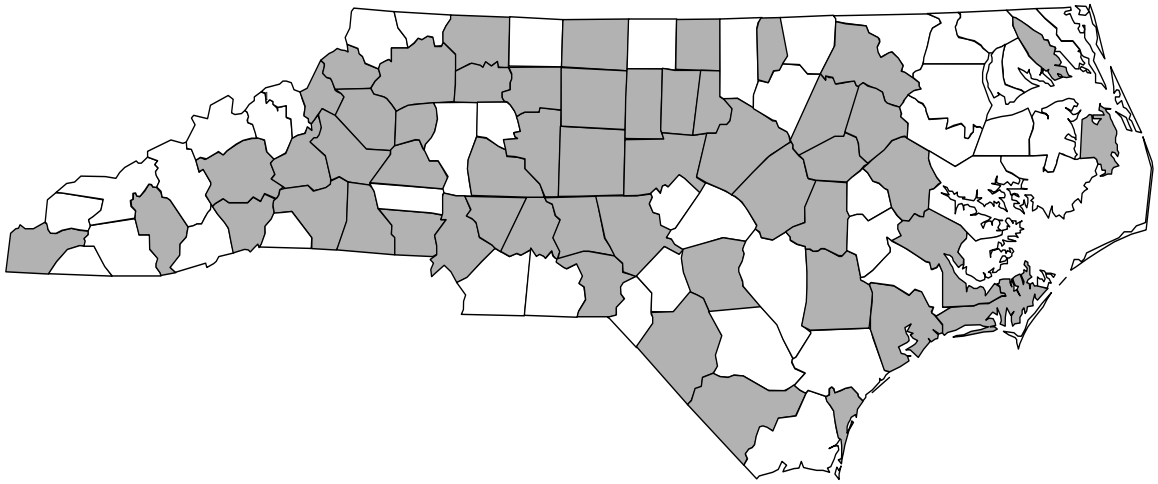
Production of these distance education SCHs varies by UNC constituent institution, with some institutions more active in offering distance education programs than others. SCH production by UNC constituent institution for Fiscal Year 2003 is presented in Figure 4.

Figure 4. Funding Model Distance Education Student Credit Hours (SCHs) Produced by UNC Institutions: FY 2003



As of spring 2004, UNC constituent institutions offer a total of 234 distance education degree programs. Of these, 167 are offered on location at sites in 53 North Carolina counties, five more counties than reported in the 2002 biennial report. With this level of outreach, citizens of other nearby or adjacent counties are brought within driving distance of UNC degree programs. Figure 5 shows the presence of these programs in counties throughout the state.

Figure 5. UNC Degree Programs by County Location, Spring 2004



Of the 131 site-based distance programs noted above, 83 degree programs are offered at 28 North Carolina Community College System (NCCCS) campus sites. (An additional 17 community colleges have UNC courses offered at their sites.) These programs enable community college graduates to complete their baccalaureate degrees in their home communities and enable community college faculty to obtain needed graduate degrees. Other site-based UNC distance education programs are located throughout the state at public school locations, Area Health Education Center (AHEC) and other health care sites, UNC graduate centers, and North Carolina military bases.

Perhaps the greatest progress in recent years in expanding access to higher education to North Carolina residents is represented by the rapidly increasing number of online distance education programs that are available online via the Internet. In spring 2000, six UNC distance programs were on-line. By spring 2004, 67 UNC distance programs existed with instruction available online, an increase in online degree programs of over 1,000 percent in four years.

Overview of UNC Distance Education Students and Programs

Analysis of the characteristics of UNC distance education students confirms that many non-traditional higher education students are enrolling in distance education programs. In fall 2003, students in funding model-supported courses had the following characteristics:

Gender: Due to work and family obligations, many women are likely to be unable to relocate to a UNC campus. UNC distance education programs are achieving their intended effect of reaching these non-traditional higher education students in their home communities. Women are enrolling in UNC distance education programs at a higher rate than for on-campus programs. Table 1 shows the gender distribution of UNC fall 2003 enrollments for students only enrolled in on-campus (regular term) courses, students only enrolled in distance education (DE) classes, and students in enrolled in both regular term and distance classes.

Table 1. Fall 2003 UNC Enrollment by Gender

	Only Reg. Term	Only in DE	Reg. Term & DE
Female:	55.9 percent	66.2 percent	68.4 percent
Male:	44.1 percent	33.8 percent	31.6 percent

***Race/ethnicity*:** It is important for UNC distance education to make higher education opportunities available for all racial and ethnic groups of North Carolina. Table 2 shows the racial and ethnic distribution of fall 2003 UNC enrollments for students enrolled only in regular term courses, only in distance education courses, and in both regular term and distance courses. For African American and Native American students, it is interesting to note that although the percentages of these students taking only distance education courses is lower than the percentages of these students enrolled

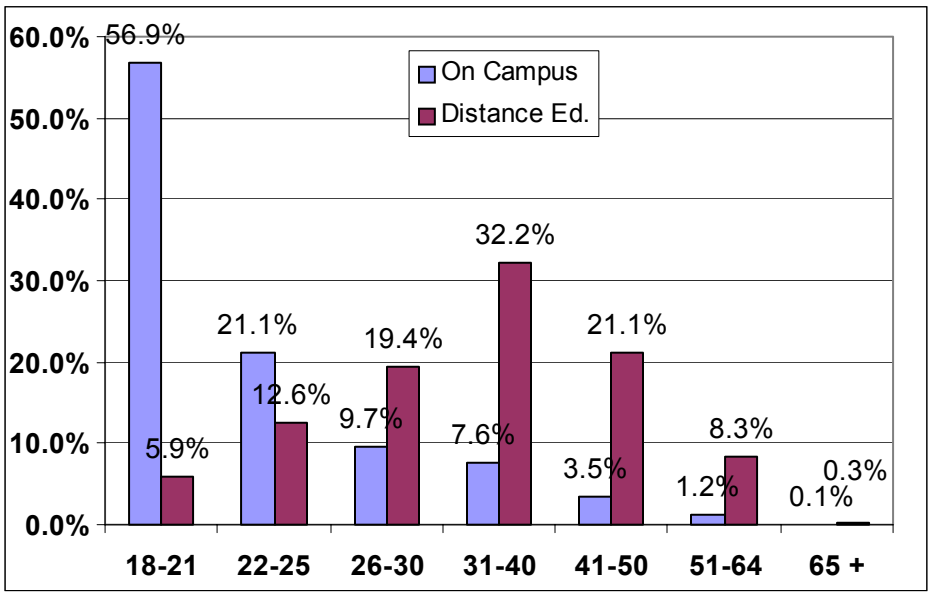
only in regular term courses, the percentages of these students enrolled *both* in regular term and distance courses is substantially higher than their percentages for only regular term.

Table 2. Fall 2003 UNC Enrollment by Race/Ethnicity

	Only Reg. Term	Only in DE	Reg. Term & DE
African American	22.1 percent	14.5 percent	34.2 percent
Native American:	1.1 percent	1.0 percent	4.0 percent
Asian:	3.2 percent	2.1 percent	2.1 percent
Hispanic:	1.7 percent	1.6 percent	1.6 percent
White:	68.0 percent	76.5 percent	55.6 percent

Age: Another important goal for UNC distance education is to reach older place-bound and working adults in North Carolina. While the majority (56.9 percent) of regular term students are in the traditional college age range of 18-21, Figure 6 illustrates that UNC distance education programs are succeeding in reaching the non-traditional college-age population. Students who are 26 and older account for 81.3 percent of distance education enrollments compared to only 22.1 percent of regular term enrollments. US Census Bureau projections indicate that the older population in North Carolina will grow rapidly over the next decade; thus this trend regarding older distance education students is likely to continue.

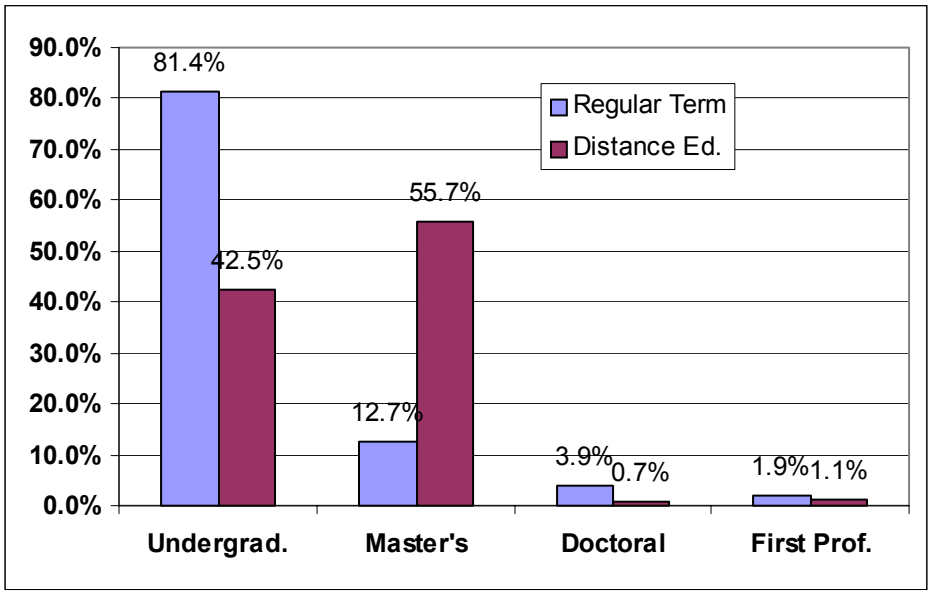
Figure 6. Age Distribution of UNC Students Enrolled in Regular Term and Distance Education Courses, Fall 2003



Residency: As with regular term (on campus) degree programs, students enrolled in state-funded distance education programs are largely North Carolina residents. In fall 2003, 89.5 percent of UNC distance education students were North Carolina residents compared to 85.6 percent of the UNC regular term students. (Student credit hours produced by non-North Carolina residents taking UNC courses out-of-state are not counted for state enrollment funding. Non-North Carolina resident instruction taking place inside North Carolina does qualify for enrollment funding, but the non-residents must pay the regular out-of-state tuition that would be charged on campus.)

Degree level of student: Because many UNC distance education programs are designed to serve the higher education needs of working adults, many programs are offered at the graduate level for schoolteachers, nurses, and others who wish to pursue advanced degrees without leaving their home community. Thus, as Figure 7 illustrates, a majority of UNC distance education students are enrolled in master's degree programs. (UNC distance programs offer only the final two years of baccalaureate degree programs off campus—one reason for the lower percentage of distance undergraduate students.) The UNC Office of the President has provided incentive grants to encourage development of a number of baccalaureate degree programs in critical need areas such as teacher education, health professions, and technology.

Figure 7. Distribution of UNC Regular Term and Distance Education Students by Program Level, Fall 2003



Methods of Instructional Delivery: UNC off-campus degree programs are increasingly incorporating technological modes of instructional delivery, and almost all use some form of e-mail or web-based sites for information and communication. A majority of courses still conduct some instruction in the traditional or "face to face"

manner, with faculty instructors traveling to the instructional site. A number of factors influence the instructional delivery mode used by a particular program. In the past, UNC campuses have often responded to requests for off-campus programs from specific agencies (*e.g.*, a community college, school district, or AHEC), and traditional face-to-face instruction has been offered at those sites. Much of this instruction has made a full or partial transition to two-way interactive video as additional "information highway classrooms" have been built at locations throughout the state.

As Internet technology becomes increasingly available and affordable, many online courses have been developed. As noted above, by spring 2004, UNC constituent institutions have developed 67 on-line degree programs. Although "start up" costs for developing such programs may be substantial, the on-line delivery of instruction enables programs to avoid site rental fees and allows access to instruction and course materials at a time and location most convenient for the student. Further, such on-line availability of courses enables UNC campuses to share courses, and a number of distance education degree consortia are being developed among UNC institutions to take advantage of this opportunity.

UNC Office of the President e-Learning and Outreach Initiatives

UNC e-Learning Initiative: In July 2003 the Office of the President developed a White Paper on e-Learning that describes issues, opportunities, and priorities for UNC progress in e-Learning and distance education. Major points of the document include the following:

- At the baccalaureate level, UNC would expect to cooperate with community colleges to identify and offer a select number of degrees online. This would require joint agreements for degree programs and student support, as well as a set of standards for various aspects of the degree offerings.
- Emphasis would be given to developing degree programs in the health professions, particularly Nursing; teacher education; information technology; business; and liberal arts (humanities, social sciences, or interdisciplinary).
- Master's degree e-Learning programs may have some subsets of the courses that can be used for credit certificate programs and for non-credit offerings. As with baccalaureate programs, online master's programs may include some activities such as proctored exams, internships, or lab experiences that require the student to have some site-based interaction, preferably arranged locally for the student.
- Online courses will also be attractive to on-campus students, who can get courses not available otherwise, take courses from home in the summer, supplement their schedule while studying abroad, or who to participate in the online learning experience. Instruction will increasingly be "blended," involving both online and face-to-face activities.
- Collaboration among campuses will be important, enabling degree programs to share courses and thus avoid unnecessary duplication. Joint degrees shared by institutions will become more common.

The White Paper also identified a number of issues to be addressed as the above initiatives are pursued. These issues include: differences in how on-campus and distance education tuition and fees are charged, tuition arrangements for multi-campus courses and programs, cost and revenue sharing in multi-campus collaborations, articulation with community college degree programs, registration, admission, and payment issues involved with taking a course from another campus, technological support for students and faculty, assuring library access for online students, and reviewing residency requirements.

To address these issues, in 2003-04 the Office of the President established the e-Learning Policy Group, comprising campus chief academic, finance, and information technology officers or their designees. One of the first activities of the Policy Group was to survey UNC constituent institutions regarding a range of campus practices, issues, and resources, some of which are noted above. Responses from the campuses have been assembled and distributed to the Policy Group. E-Learning Policy Group members and other selected individuals from campuses and the Office of the President have formed four subcommittees to address the following topics: tuition and fees, multi-campus programs and residency issues, infrastructure and standards, and faculty support.

UNC Office of the President e-Learning grants: To advance the development of e-learning programs, the UNC Office of the President (UNC-OP) has provided a number of grants to UNC constituent institutions in recent years. Grants made prior to fiscal year 2003 are described in the previous biennial report. Based on a state-wide needs analysis by the UNC Office of the President, three academic areas were selected for emphasis in the development of online degree programs: teacher education, health professions education, and technology. Based on these priorities, in FY 2003 UNC-OP renewed grants to UNC institutions to complete planning and development of online degree programs and related licensure and certification courses in the following areas:

ECU: BS in Elementary Education, BS in Middle Grades Education, BS in Birth-Kindergarten Education, RN to BSN Nursing, BSBE in Information Technology, and BS in Industrial Technology
ECSU: BS in Teacher Education
FSU: BS in Elementary Education
NCA&T: BS in Agricultural Teacher Education, MS in Technology Education, BS in Business Education, BS in Occupational Safety and Health, and Licensure in Elementary and Special Education
NCCU: BS in Information Sciences, BS in Early Childhood Education
NCSU: Licensure in Science Education and English as a Second Language, BS in Agricultural Education, and three online Engineering courses
UNCA: Development of labs for information technology courses
UNC-CH: Licensure in School Library Media, Licensure in Middle Grades Education, and a data skills module for online Master of Public Health program
UNCC: Licensure in Middle and Secondary Education
UNCG: Software license for Blackboard, Enterprise Edition
UNCP: Preschool licensure program

UNCW: RN to BSN online program (with UNCC)
WCU: BSN in Nursing and BS in Special Education
WSSU: Licensure for lateral entry in Special Education.

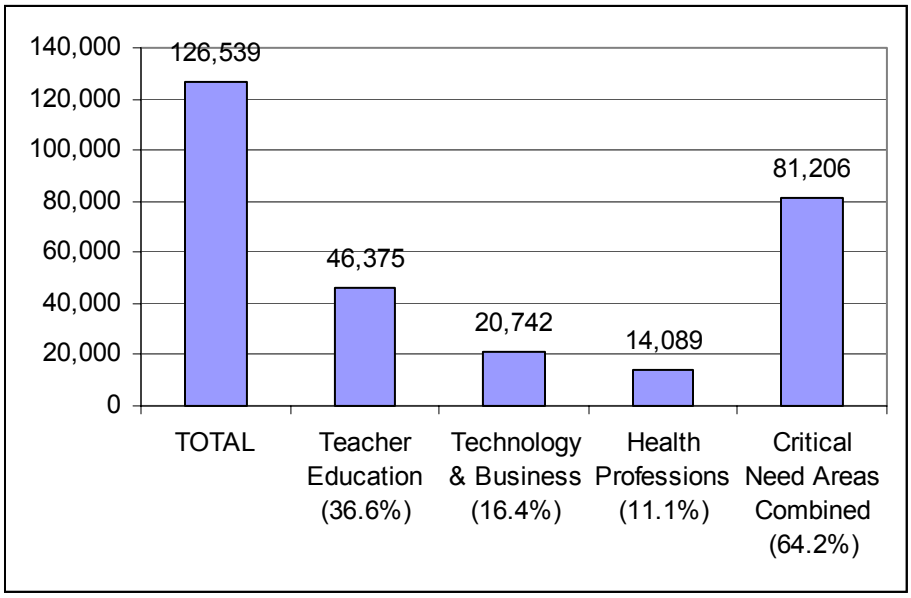
UNC-OP made additional grants to UNCG to coordinate planning for distance degree programs to produce nursing faculty for North Carolina community college and universities and to ECU in investigate a collaborative tool for increasing interaction in online learning.

For Fiscal Year 2004, the Office of the President emphasized the following e-Learning grant priorities: online delivery of an undergraduate or 2+2 program in teacher education or nursing; course development to support online RN to BSN programs and specific teacher licensure programs such as Special Education, Bilingual Education, and Science and Mathematics; course development to support a 2+2 program in a technical area that can be aligned with the NC Community College System's AAS degree in Information Systems; and course development for language instruction that can be shared among campuses. Grants were made to support the following activities:

ECU: 2+2 program in Information and Computer Technology
ECSU: Teacher education funding for the Northeast NC Access Project and Special Education courses
FSU: Second academic concentrations (for teachers) in History and Sociology
NCA&TSU: Collaborative program with community colleges to train Business Education teachers, and a 2+2 online Information Technology degree
NCCU: Birth-Kindergarten teacher certification program
NCSU: Purchase of a online laboratory for language instruction
UNC-CH: Nursing programs in Women's Health and Nursing Practice, Spanish for health professionals, Radiological Sciences collaboration, Social Work, Gerontology, and online writing support software
UNCC: Nursing RN to BSN degree program, and licensure for lateral entry teachers
UNCG: RN to BSN Nursing program, and online student support
UNCP: Technology courses to be shared with a community college
UNCW: Revision of existing Nursing courses and development of new online courses, online graduate certificate in Instructional Technology, development of a BS degree in Clinical Research, and Intermediate Japanese instruction (to be shared with ECU)
WCU: Online MAT and MAEd degrees in Special Education
WSSU: Birth-Kindergarten degree program, and lateral entry teacher education courses

Analysis of distance education student credit hours (SCHs) taught by UNC institutions in FY 2001 indicates that UNC is indeed focusing its distance education efforts on critical need areas of North Carolina. As Figure 8 shows, nearly two-thirds of SCHs produced were in the critical need areas of teacher education, health professions education, and the economic development-related areas of technology and business.

Figure 8. Distribution of UNC Distance Education Student Credit Hours (SCHs) by Area of Critical Need: FY 2003



UNC outreach to NC military bases: Another UNC distance education priority during the two years covered by this report is outreach by the Office of the President and individual UNC institutions to North Carolina's military bases. North Carolina has the third highest population of active duty military in the nation (behind California and Texas), and these individuals, their dependents, and their bases serve an important role in the economic life of the state. Two meetings of UNC-OP and UNC institution representatives have been held with military base education services officers and their commanding officers to review military base educational needs and issues, the first in July 2002 at the UNC-OP building and the second in May 2003 at Seymour Johnson Air Force Base in Goldsboro. Every military base in North Carolina was represented at these meetings (Fort Bragg, Pope Air Force Base, Camp Lejeune and New River Marine Base, Seymour Johnson Air Force Base, Cherry Point Marine Air and Naval Depot, and the Elizabeth City Coast Guard Station.

The outcome of these meetings and numerous visits by UNC-OP staff and UNC institution representatives to NC military bases has been greater communication and collaboration between UNC and the state's military bases than ever before. A number of military base—UNC institution relationships have been established, which will be ongoing as the bases identify educational needs and as North Carolina-based troops return to the state from deployments overseas. UNC-Wilmington has signed a Memorandum of Understanding (MOU) to serve the educational needs of Camp Lejeune/New River Marine base, and Fayetteville State has signed an MOU with Seymour Johnson Air Force Base. East Carolina University and NC State University

have marketed their online degree programs to the military bases, and ECU is establishing degree programs at Wayne Community College in close proximity to Seymour Johnson. Cherry Point Naval Depot and Marine Air Station has the largest civilian engineer workforce in eastern North Carolina, and NC State has enrolled a number of these engineers in its distance engineering master's programs. Fayetteville State continues to offer a number of degree programs at Fort Bragg that serve the needs of that base and Pope Air Force Base, and additional UNC institutions are seeking opportunities to serve these bases. The Elizabeth City State University Aviation Science program has a close working relationship with the nearby Coast Guard Station.

Assuring Quality in UNC Distance Education Programs

UNC constituent institutions are committed to providing the same level of quality instruction to students enrolled in distance education programs as for students in on-campus degree programs. In general, the same evaluation processes for course and instructor quality used on campus are used for distance programs as well. Program assessment is typically done on a course-by-course basis. Some of the approaches to ensuring quality include: student surveys on quality of course and instructor, analysis of student performance and demographic data, surveys of satisfaction with services such as registration and library access, peer evaluation of teaching, program advisory councils, use of evaluation specialists, and feedback from employers and internships. The companion CD that was produced to accompany this report, ***Dreams to Degrees***, contains separate sections for every UNC institution offering distance courses or degree programs, and each institution's section contains a statement of how it ensures the academic quality of its distance offerings.

Another powerful indication of the quality of UNC distance education programs comes from comments offered by distance education students and others regarding their experiences with these programs. In addition to the quotes offered in the Preface of this report, many of the individual campus sections on the ***Dreams to Degrees*** CD contain many additional student comments about the contributions that UNC distance programs have made to their communities and the differences these programs are making in people's lives.

Each UNC distance education program must provide a variety of quality-related information to the Office of the President before the program is authorized for establishment, including: intended outcomes and learning objectives, curriculum and schedule, faculty and support staff, library and learning resources, physical resources, financial support, and evaluation and assessment. These requirements conform to standards established by the Southern Association of Colleges and Schools (SACS) Commission on Colleges (COC), which includes quality of distance education programs among the criteria that accredited institutions must address.

The UNC Office of the President also assesses perceived quality of distance education programs by comparing results of graduating senior surveys conducted with

students enrolled in comparable on campus and distance degree programs. Outcomes of the last round of surveys (summer 2002) indicated that the great majority of distance education students are very pleased with the quality of their education, and their ratings of their educational experiences and outcomes were generally similar to those of on-campus students. Over 90 percent of both undergraduate groups gave their instructors an overall rating of excellent or good on a set of eight measures of faculty teaching effectiveness. The great majority of undergraduates in both groups believed that their educational experience contributed to their knowledge, skills, and personal development on a variety of dimensions, including writing, mathematical, and speaking skills. When asked how they would evaluate the quality of instruction in their major, 92.3 percent of on-campus students rated the instruction as "good" or "excellent," compared to 92.8 percent of distance students. When distance education students were asked, "How likely would you have obtained your degree had the off-campus program not been available?," nearly half (48.3 percent) responded "not likely," or "probably not."

Graduate students, both on and off campus, were also surveyed in summer 2002, and both groups were similarly positive about the quality of their instruction, with approximately 95 percent of both groups of students rating their instruction as excellent or good. In general, faculty teaching distance education classes have found their students to be motivated and to perform at levels of achievement comparable to their on campus student counterparts.

Cost Analysis of Distance Education

Methodology: The costs analysis was measured for a sample of instruction of paired courses offered both on- and off-campus during the spring and fall 2003 semesters. The data collection method used the same methodology conducted in the previous reporting requirements. Course selection occurred as the unit of analysis, since there are very few programs that delivered in their entirety both on- and off-campus, or which conclude within a single year. In order to satisfy the reporting deadline, the calendar year 2003 was chosen as the measurement period. Courses taught in either spring 2003 or fall 2003 qualified for measurement. The methodology was designed to capture total costs. Where possible, actual costs were used; for allocation of indirect (facilities and administration) costs, a variation of the method used to charge indirect costs on federal contracts and grants was used. The standard formula was adapted to recognize the intent to capture total costs and was applied on an institutional basis. A sample of nine "course pairs" was selected to compare an on-campus course to a similar off-campus course. The sample was chosen to include courses with variations in methods of instructional delivery, course instructional level and discipline. The overwhelming majority of the course pairs selected were separate sections of the same course taught during the same time period.

Findings: In the current costs analysis, the total costs for funding distance education courses per course enrollment (*i.e.,* one student registration in one course) were 75 percent higher than funding for on-campus students. Study results yielded an average

total cost for distance education course delivery of $1,219 per course enrollment. On-campus course delivery costs averaged $310 per course enrollment.

The difference in costs per course enrollment between on-campus and distance education courses is mainly explained by the number of students enrolled in each course. (This finding is also supported by the UNC-Wilmington cost study described below.) Average costs for instructional delivery for on-campus and distance courses were generally similar ($21,687 for distance classes and $23,199 for on-campus classes). However, the average class size for the on-campus courses examined in this study was 77, compared to an average class size of only 20 for the distance education courses. Enrollments in two on-campus courses in the study exceeded 190, whereas the largest online distance class enrollment was 26.

The three biennial costs analyses performed to date all indicate that the greatest direct costs of traditional ("face-to-face") instruction, whether on- or off-campus, are in the instructional salary costs, primarily related to the delivery and administration of the course. At the present time, the primary faculty member does the largest part of the course development, delivery and administration, although this may change somewhat when non-traditional delivery methods are employed. In the current analysis, instructional salary costs accounted for 79 percent of the costs of traditional "face to face" distance education instruction and for 63 percent of technology-mediated courses (online, CD, and streaming video). When instructional salary costs were subtracted from the overall course costs, "face to face" courses cost $326 per course enrollment, online (Internet) courses cost $437 per course enrollment, and streaming video/CD classes cost $470 per course enrollment.

Course development costs comprise a significant part of the costs measured for those courses delivered in a non-traditional manner (for our purposes, Internet or interactive video). The additional costs of technical expertise (often in the form of instructional technology specialists), training, hardware and software required to adapt courses for technology-mediated delivery add further to course development costs. This represents a new category of costs not present in traditionally-taught courses and not anticipated by our current funding model.

Allocated capital cost of physical facilities appears to be less of a factor than was originally anticipated. For the on-campus courses, a portion of the space used, taking both square footage and space utilization factors into account, produced a relatively small charge for virtually all on-site classes. While the costs of facilities for off-site courses taught in the traditional, face-to-face manner were usually higher, they still did not make up a significant portion of the total costs in most cases. It should be noted that no attribution of the capital costs associated with the infrastructure required to enable courses to be taught at a distance has been made.

Campus cost studies: In addition to the UNC-OP study described above, UNC institutions also conduct their own analyses of instructional costs of distance education programs. During 2003, UNC-Wilmington conducted a comprehensive financial analysis of on-line education that encompassed both direct (variable and fixed) and indirect costs. Faculty salaries, administrative support, start-up development costs, incremental web support costs, operating costs and a factor for institutional support were considered in the

analysis. Costs were aggregated from individual departments to college/school level for comparative purposes against traditional face-to-face delivery methods. Three years of historical data were used. The results indicated substantially higher costs for the development and ongoing delivery of on-line classes relative to face-to-face delivery systems. This was due almost entirely to the reduced number of student credit hours that could be accommodated by a single faculty member in on-line classes versus face-to-face. By attempting to balance class size with adequate communication and quality, on-line course student credit hour production was on average substantially lower than face-to-face. The outcomes have resulted in analysis and testing of new faculty work-load models and teaching methods to expand student credit hour production while assuring a quality education for all students. Results from these new methods will be assessed during the 2004-2005 year.

Conclusion

As highlighted in the Executive Summary and documented throughout this report, state enrollment funding for UNC off-campus and distance education degree-credit instruction is achieving its intended effect of expanding access to higher education for North Carolina citizens unable to relocate or travel to a UNC campus and reducing the demand on limited on-campus enrollment capacity. Among other benefits, this funding enables distance education students to pay tuition rates at a level comparable to on-campus tuition rates, thus making higher education not only accessible but also affordable for these citizens.

Prior to the 1998 legislation referenced at the beginning of this report, North Carolina was the only state in the 16-state Southern Regional Education Board (SREB) region that did not provide distance education funding for its university system. The enrollment funding has enabled UNC campuses to make crucial investments in faculty training, staff support, and information technology that are needed to offer high-quality instruction in a rapidly evolving and expanding distance education environment.

Instructional quality is paramount in developing these distance education opportunities, and policies and assessment procedures are in place to assure this. Costs of instruction are monitored carefully, and ongoing attention is being given to developing cost-effective programs through efficient use of information technology and collaboration and coordination among UNC campuses. UNC distance education programs are planned with the goal of raising the educational attainment level of North Carolinians and thus improving their economic and social well being. Careful needs assessments are conducted before programs are developed, and programs authorized are those that would be most beneficial for the economic growth and vitality of North Carolina communities. Consultation with other state partners (*e.g.*, the North Carolina Community College System, public school systems, Area Health Education Centers [AHEC], and professional associations) in planning and delivering quality distance education programs is a high priority.

UNC distance education funding is one of several steps taken by the General Assembly and the UNC Board of Governors in recent years to enhance educational access and efficient instructional delivery in the state, and it is likely that other initiatives

and developments will continue to advance this commitment in the future. Both off-campus degree program offerings and off-campus enrollments have increased sharply during the first six years of state funding, and there is every indication that this growth will continue if distance education enrollment funding increases proportionately to accommodate this growth.

Draft,5/3/2004

UNC IN WASHINGTON PROGRAM

Goal
The program's primary goal is to provide an opportunity for upper-level students from the University of North Carolina's constituent institutions to work and study in Washington, D.C. Students work 24-32 hours per week in internships at Washington-based organizations such as the U.S. Congress, the U.S. executive branch, think tanks, and interest groups. They spend 3 hours per week in an academic seminar, the Washington Experience. Up to 45 students per semester (including summer) participate in the program.

Application and Selection Procedures
UNC institutions solicit and review student applications for the program. Each participating campus selects up to three students each semester to participate. General guidelines are set by the UNC in Washington Steering Committee, but students who qualify are selected by the campus. Applications include the following information:

- Official academic transcript
- Resume
- One-page personal history
- One-page statement of purpose/goals
- Names and contact information for three references
- Interview with UNC-OP selection committee

Internship
Students spend 24-32 hours per week in internships, matched with supervisors who will integrate them into the daily operation of the organization and help them define research projects of importance to the organization. Student internships result in tangible products such as briefings, research memos, policy analyses, and working papers. The on-site program director, based in Washington, assists students with finding internships and oversees the work in the internship in order to ensure that it meets program educational standards.

Course Work
Students enroll in 12-15 hours course credit at their home institution for the entire Washington semester. Generally, students will receive 6-9 credits for an internship, 3 credits for a Washington Experience seminar course, taught by a university faculty member in Washington, and 3 credits for an independent study related to their academic majors. The independent study is supervised by a faculty member at their home institution. Before the beginning of the semester, students, in consultation with faculty advisers and their undergraduate studies chairs, decide how those credits translate into hours that satisfy home institution requirements.

Housing
Students are housed in UNC leased residence facilities in Washington, D.C.

Staffing
An on-site program director, based in Washington, serves as a mentor and assists students with finding internships and housing. An on-site faculty member, based in Washington, teaches the seminar. Institutional representatives assist with course credit, financial aid requirements, and institution-based requirements.

Funding
Students pay their regular institution full-time tuition and appropriate fees for the semester. Students are responsible for housing, meals, and travel, all of which should be factored into financial aid requests.

Planning Committee
A planning committee, composed of institutional representatives, advises program staff regarding program structure and guidelines. A faculty committee develops the curriculum for the Washington Experience seminar and advises program staff regarding co-curricular activities.

Report to the Board of Governors
University of North Carolina System

2004 UPDATE:
PRIMARY CARE MEDICAL EDUCATION PLANS

From

Duke University School of Medicine
East Carolina University School of Medicine
University of North Carolina School of Medicine
Wake Forest University School of Medicine
North Carolina AHEC Program

This report is submitted to the Board of Governors of the University of North Carolina in response to General Statute 143-613 as contained in House Bill 230 passed in the 1995 session of the North Carolina General Assembly.

April 2004

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2004 UPDATE:
PRIMARY CARE MEDICAL EDUCATION PLANS

EXECUTIVE SUMMARY

During its 1993 session, the North Carolina General Assembly expressed its interest in expanding the pool of generalist physicians for the state. In Senate Bill 27 as amended by House Bill 729, the General Assembly mandated that each of the state's four schools of medicine develop a plan setting goals for an expanded percentage of medical school graduates choosing residency positions in primary care. Primary care was defined as family practice, internal medicine, pediatrics, and obstetrics-gynecology. It set the goal for the ECU and UNC Schools of Medicine at 60 percent of graduates. For the Wake Forest University and Duke University Schools of Medicine, it set the goal at 50 percent. The General Assembly also mandated that the N.C. Area Health Education Centers (AHEC) Program develop a plan to expand the number of primary care residency positions. Finally, the legislature mandated that a monitoring system be developed by the Board of Governors to report on specialty selection by medical students at graduation and five years after graduation.

In 1994, the four schools of medicine and the N.C. AHEC Program submitted primary care educational plans for increasing the percent of medical school graduates choosing primary care residency programs and subsequently generalist practice. General Statute 143-613 as contained in House Bill 230 passed in the 1995 session of the North Carolina General Assembly requires an update of these plans beginning in 1996 and every two years thereafter.

The plans of the four schools built upon the unique missions and programs of the schools. Although specific activities differ between the schools, they are all implementing initiatives in similar areas in order to increase the percentage of graduates choosing careers in primary care. In each case, the schools built upon their long-standing relationships with the AHEC Program in order to conduct increased medical student and primary care residency training in community settings. The following attachments highlight the specific changes which have taken place since 1994. A brief summary of the themes addressed by the updates includes the following:

- Pre-medical Students: Each school has increased contact with pre-medical students in order to make clear the opportunities for practice as a generalist physician. Several of these activities target minority and disadvantaged pre-medical students.
- Admission to Medical School: Each school has placed increased emphasis on the admission of students with an interest in generalist practice. All four admissions committees have primary care physicians as members.
- Primary Care Role Models: Each school expanded activities to give students an in-depth and continuing exposure to generalist physicians at the school and in community settings. Over the four years of medical school, students receive career advising, mentoring, and role modeling from these physicians.

- Curriculum Changes: Each school implemented curriculum changes that give students greater exposure to primary care. While the curricula and the plans of the four schools vary greatly, the following are themes that are found in each of the plans:
    - increased education in the ambulatory setting
    - increased rotation of students at all levels to community practices, with a particular focus on rural and inner city underserved areas
    - increased emphasis on topics that are critical to the practice of the generalist physician. These include: health promotion/disease prevention; nutrition; geriatrics; alcohol and substance abuse; violence; ethics; health care organization, financing, and economics; and more effective uses of information technology
    - increased emphasis on the physician as a member of a cost-effective health care team operating in a managed care environment.

- Community Practitioner Support: Each school and its affiliated AHECs, in association with the Office of Rural Health, the North Carolina Primary Care Association, and the Reynolds Community Practitioner Program, have expanded activities in support of generalist practitioners in community settings. Special emphasis has been given to practitioners in rural, inner city, and isolated settings. Some activities include:
    - expanded *locum tenens* coverage and community physician exchange programs
    - expanded opportunities for physicians to serve as preceptors and to benefit from faculty development programs, telecommunications, reimbursement for teaching, etc.
    - continuing education targeted to improve practice outcomes

- Information Services and Telecommunications: The four schools and their affiliated AHECs expanded existing library and information services to primary care physicians in underserved settings. For those physicians serving as preceptors, this includes the positioning of computer workstations in the practice so physicians and students can access the world's information databases. These developments also include developing teleclassroom and teleconsultation units at the schools, the AHECs, and at selected smaller hospitals and health centers to strengthen student education in these sites and to decrease the isolation of practitioners. The AHEC Digital Library, a comprehensive electronic set of information resources, including searching databases, full-text journals and other resources, is available to all community practitioners who take students in their practices.

- Primary Care Residency Training: Each school and the AHECs are expanding the number of primary care residency positions and developed rural and inner city training opportunities for residents.

- Table 1 (below), taken from the November, 2003 report "Monitoring the Progress of North Carolina Graduates Entering Primary Care Careers" summarizes the residency choices for the 2002 and 2003 medical school graduates. The decline in the percentage of graduates choosing primary care careers mirrors a national trend.

The dean and the faculty at each of the four schools of medicine have taken seriously the mandate of the General Assembly and have implemented plans that will help increase the number and percentage of medical students choosing primary care residency programs and, subsequently, generalist practice. This report, with attachments from the four schools of medicine and the N. C. AHEC Program, responds to that legislative mandate by providing an update on current and planned initiatives which are directed toward ensuring that our medical care education programs meet the needs of our students and achieve the goal of increasing the primary care workforce for our citizens.

Table 1
North Carolina Medical Students-Initial Choice of Primary Care*
for 2002 and 2003 Graduates

School	Total # of Graduates		Number of Graduates not Entering Residency Training		Number of 2002 and 2003 Graduates Entering Residency Training		Number of 2002 and 2003 Graduates Entering Residency Training Who Chose a Primary Care Residency		% of 2002 and 2003 Graduates Entering Residency Training Who Chose a Primary Care Residency	
	2002	**2003**	**2002**	**2003**	**2002**	**2003**	**2002**	**2003**	**2002**	**2003**
Duke	88	85	0	3	88	82	40	32	45%	39%
ECU	71	60	0	0	71	60	44	44	62%	73%
UNC-CH	151	125	6	0	145	125	76	58	52%	46%
Wake Forest	96	93	2	3	94	90	46	35	49%	39%
Meharry	1	0	0	0	1	0	0	0	0%	N/A
Total	**407**	**363**	**8**	**6**	**399**	**357**	**206**	**169**	**52%**	**47%**

*Primary Care = Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology. Excludes one-year Internal Medicine residencies expected to lead to sub-specialty training.

Sources:

Wake Forest Office of Student Affairs
UNC-CH Office of Student Affairs
Duke Office of Medical Education
American Medical Association
ECU Office of Medical Education
Association of American Medical Colleges
NC Medical Board
Meharry Medical College

Compiled by:

NC AHEC Program
Cecil G. Sheps Center for Health Services Research

Report to the Board of Governors of the
Consolidated University of North Carolina

Update: Primary Care Education Plan
Duke University School of Medicine

Edward C. Halperin, M.D.
Vice Dean
School of Medicine

Barbara L. Sheline, M.D., M.P.H.
Assistant Dean of Primary Care
School of Medicine

Marvin Swartz, M.D.
Director, Duke AHEC Program
School of Medicine

April 9, 2004

A report in response to General Statue 143-613 as amended by Chapter 507 of the 1995 Session Laws (House Bill 230) of the North Carolina Assembly

2004 Update: Primary Care Education Plan

Duke University School of Medicine

In 1994 the Duke University School of Medicine submitted an educational plan with the goal of encouraging students to enter the primary care disciplines of general internal medicine, general pediatrics, family medicine, and obstetrics/gynecology.

Support for these innovations has come from the North Carolina AHEC, a training grant from the U.S. Health and Human Services Grants for predoctoral education in family medicine, from the NC Academy of Family Practice, the Josiah Mercy, Jr. Foundation, the Fullerton Foundation, Hewlett Packard, and substantial support from the Office of Medical Education at Duke.

One measure of our programs to train individuals for a career in primary care is the distribution of graduates across residencies. A substantial proportion of Duke graduates enter primary care residencies.

Match 2002	**Graduates = 84**
Internal Medicine	**21**
Family Medicine	**1**
Pediatrics	**11**
Obstetrics/Gynecology	**2**
Medicine/Pediatrics	**4**
Total	**39**
Medicine - Preliminary	**7**
Match 2003	**Graduates = 86**
Internal Medicine	**16**
Family Medicine	**2**
Pediatrics	**7**
Medicine/Pediatrics	**2**
Obstetrics/Gynecology	**4**
Total	**31**
Medicine - Preliminary	**12**
Match 2004	**Graduates = 102**
Internal Medicine	**35**
Family Medicine	**4**
Pediatrics	**7**
Obstetrics/Gynecology	**3**
Medicine/Pediatrics	**5**
Total	**54**
Medicine - Preliminary	**9**

Note: the proportion of graduates entering primary care includes one year Internal Medicine residencies expected to lead to sub-specialty training.

The Generalist Activities include:

1. **Development of primary care faculty**

   Duke faculty continues to play a leading role in faculty development of community preceptors from all North Carolina Medical Schools through the North Carolina Academy of Family Physicians and the NCAHEC Program through its Office of Regional Primary Care Education (ORPCE) teaching sites.

   A large group of primary care faculty serve on the Medical School's Curriculum, Admissions, and Promotions Committees.

   The network of primary care practices added to Duke continues to be a resource for teaching medical students. NCAHEC ORPCE teaching sites also play a major role in primary care teaching.

2. **Development of Research Programs in Primary Care**

   Research efforts in primary care have continued in the areas of treatment of common illness, health outcomes, general health status, and health services delivery. Such research is being carried out in the Health Services Research Program at the Veteran's Administration Medical Center, the Epidemiology Program in the Department of Psychiatry and the Aging Center, the Clinical Epidemiology and Biostatistics Program, and the Department of Community and Family Medicine. The Health Promotion and Disease Prevention Center at the Veteran's Administration Medical Center is active in the medical school curriculum. Many students participate in primary care research in their third year at Duke through the combined MD/MPH program, the Epidemiology, Health Service and Health Policy Study Program, and the Master's of Health Science in Clinical Research degree.

3. **Admissions and Premedical Preparation**

   Every applicant to Duke Medical School receives information about Duke's program in Primary Care prior to their interviews. The assistant dean is available to discuss any applicant's questions about this program during the application process. As the table in this report shows, a substantial proportion of our graduates, eventually choose to enter primary care internships.

4. **Financial Aid**

   Duke continues to aggressively secure financial aid for student and identifies scholarships available for those interested in primary. Primary care financial aid programs are overseen by the Director of the Primary Care Program in coordination with the Financial Aid Office to help ensure that eligible students are aware of the opportunities. Duke participates with the Department of Health and Human Services to pursue grant and loan programs to benefit students interested in Primary Care.

5. Medical School Curriculum

A. Practice

The Practice course exposes all students at Duke to early ambulatory medicine in year one and provides much of the ambulatory care core training at Duke preclinically and during the clinical year. Students are taught the basic skills they need to be effective in the ambulatory setting. The course is now required for first, second and third year students.

All fourth year students are required to have a longitudinal ambulatory care experience. Ambulatory experiences have been added in many core clerkships.

B. Primary Care Program

This four-year long program involves and supports students interested in primary care. Students are paired with a primary care faculty mentor, participate in extracurricular programs, select additional primary care opportunities during clinical training, and are encouraged to participate in primary care research during their third year.

6. Extracurricular Activities

National Primary Care Day

In the past several years Duke has participated with student leadership in National Primary Care Day, with support from the Duke Office of Medical Education. This event is co-sponsored by the Association of American Medical Colleges. The event continues to include resident physicians, community faculty, and students.

Student Interest Group

The Family Medicine Interest Group continues to provide opportunities for all students interested in primary care with a chance to learn primary care clinical skills and share interesting topics. Other interest groups, such as one in pediatrics, are also active.

7. Primary Care Residency Training

Duke continues to have five primary care residency tracks: general internal medicine, general pediatrics, a combined medicine/pediatrics residency, family medicine, and obstetrics/gynecology.

8. Community Practitioner Support

Duke continues to work closely with the other three medical schools in North Carolina and the North Carolina Area Health Education Centers Program (AHEC). Duke continues to coordinate placement of the majority of its community learners with practitioners throughout the state with assistance from the Office of Regional Primary Care Education (ORPCE). The ORPCE staff has continued to be very successful in recruiting, training, and supporting community preceptors in their regions. Duke supports key community practices with teaching resources whenever possible.

9. **Tracking Students and Residents**

Duke maintains information on training and practice activities of its students and house staff alumni through several sources. Local records are kept of residencies entered and current addresses of those in practice. AAMC provides information about the status of residency training. These data are summarized and forwarded annually to the statewide coordinator at the AHEC central office, who, in turn, reports to the North Carolina State Legislature.

Summary

Duke continues to look for innovative ways to address the problems of increased patient volumes in the ambulatory settings and increased need to train students in these same settings. New teaching methods are being developed such as use of the computer-based informatics to make teaching more efficient. Residencies will be geared to addressing the nation's needs for physicians. Research efforts in health care delivery and primary care outcomes will continue to grow. Duke is committed to training leaders that will be part of the solution to today's need for primary care physicians.

Report to the Board of Governors
University of North Carolina System

2004 Update:
Primary Care Medical Education Plan

Brody School of Medicine
at
East Carolina University

Respectfully Submitted by:

Cynda A. Johnson, M.D., M.B.A
Dean, School of Medicine

Julius Q. Mallette, M.D.
Senior Associate Dean
School of Medicine

March 29, 2004

A report in response to General Statue 143-613 as amended by Chapter 507 of the 1995 Session Laws (House Bill 230) of the North Carolina Assembly

2004 Update: Primary Care Education Plan

East Carolina University
Brody School of Medicine

In 1994, the School of Medicine (now Brody School of Medicine) at East Carolina University submitted an Education Plan for increasing the number and percent of medical students choosing primary care residency programs, and subsequently generalist practice. Updates to the plan were submitted in March 1996, June 1998, March 2000, and April 2002. Initiatives described in the plan included targeted efforts in four separate areas: 1) Pre-Medical Initiatives, 2) Undergraduate Medical Education, 3) Graduate Programs and, 4) Practice Support and Outreach. This year we are pleased to report recent achievements of our efforts. Our strategies remain the same; however some programs have changed in order to maintain our efforts in a changing economic and demographic environment.

As a result of these efforts, Brody School of Medicine (BSOM) has continued to excel in the numbers of graduating students selecting residency positions in the primary care disciplines. Student selection of primary care residency positions remains higher than national average. Fifty-one percent of students in the Class of 2004 selected primary care residency. If Ob/Gyn programs are included the number is 58%. In keeping with prior years' outcomes it remains significant that for the Class of 2004, 47 % (37/78) chose a residency program in North Carolina, and 24 of the 37 (65%) are staying at University Health Systems of Eastern Carolina. For the Class of 2003, 62% chose a residency program in North Carolina, with 27% staying at University Health Systems of Eastern Carolina.

I. PRE-MEDICAL AND ADMISSIONS INITIATIVES

We are continuing the strategies at the premedical level through: (1) communications network with premedical advisors throughout North Carolina; (2) research of variables that predict career choice and practice in underserved areas; and (3) support of a Health Careers Development Program to disseminate information about health careers and to encourage the participation of under-represented minority students in health careers. BSOM continues to host numerous conferences for college and university premedical program advisors from 24 institutions across North Carolina. The annual Health Career Awareness Program conference held its 13th conference this fall. Over the past several years, 25-30 advisors, representing 20-25 third-level institutions in North Carolina, attended the conference. This fall we had a record number of schools (44) participating, demonstrating the programs increasing outreach. The purpose of the meeting remains to provide the advisors with a clearer understanding of the need for generalist physicians in North Carolina and their role in identifying and encouraging promising students to pursue careers as future generalists. Our keynote speaker for this year's event was an alumnus of the school of medicine, now a Family Medicine physician in Edgecombe County. The statewide premedical advisors group that was initiated as a result of contacts initially established through these conferences continues to meet regularly. *The East Carolina Generalist* newsletter, published through our Office of Generalist Programs, continues to be distributed to premedical advisors throughout the region by that office.

Working with the undergraduate campus of East Carolina University, the Office of Generalist Programs also assisted in the development of the MD/7 Program, an initiative designed to allow promising matriculates to the University to choose an education path which allows them entrance to the medical school after the 3rd undergraduate year. This is a competitive program for the best and the brightest of our undergraduate students, and so the selection process is rigorous, and includes a formal interview with the Medical School Admissions Committee. Successful participation in the program will provide the selected students not only entrance to the medical school after their 3rd year of undergraduate work, but also the awarding of a Bachelors Degree following successful completion of the 1st year of medical school. A medical degree will follow three years later.

To support the MD/7 Program, the Office of Generalist Programs (OGP) was also actively engaged in the development of a Health Careers Shadowing Program for undergraduate students. This allows twenty 1st year students each semester to participate in an experience at the Medical Center. Students are assigned by the OGP, for 2 weeks in a row, 4-5 hours each week, for a total of 12 weeks to different mentors in different areas of the hospital or outpatient departments. With attention to HIPAA and OSHA regulations, they are afforded the opportunity to see first hand, varied slices of medical practice.

We are continuing the Community Health Access Group (CHAG) program established in 1994 to address physician maldistribution in eastern NC by focusing on people in the early stages of career planning (i.e. high school students and people considering mid-career changes). Evidence of our abilities to "grow our own" through this program, continues to be seen by the recruitment of students from the eastern regional seen in the production. The rationale for this approach evolved from the "growing your own" concept, which contends that physician recruitment and retention may be improved by identifying and supporting community residents interested in pursuing medical careers. A CHAG, comprised of a group of key community members would serve as a mechanism for identifying and supporting prospective applicants to medical school. Members of EAHEC coordinated CHAG program activities, with greatest success in Washington County. The success of the Washington county CHAG has depended greatly upon the creation of an internal support base of key community members. In addition, it was necessary to integrate community-specific health care access concerns into the CHAG plan and to provide ongoing opportunities for CHAG communication to help surmount distrust or competition between community agencies. Since 1999, activities have been expanded to address research and information dissemination. One student from Washington County has graduated from Brody School of Medicine and is pursuing a career in Internal Medicine. Several high school students from Plymouth High School have participated in the Ventures into Health Careers Institute and are in the pipeline for a health career.

The Health Careers Development Workshop is held each year to facilitate the recruitment of underrepresented minority students into health care careers through educational seminars. The Ventures into Health Careers Institute, sponsored by EAHEC, and partially supported by the Office of Generalist Programs, is held each summer for 9th and 10th grade students from underrepresented minority groups. This program is now in its eight year. During 1998-1999, 22 students from 12 of the eastern counties attended this summer program. The two-week experience includes educational sessions and an opportunity to shadow various health professionals. In addition to the summer program, workshop sessions for public school

administrators, educators and counselors representing middle and high schools are presented to increase their awareness of health career opportunities for students.

Academic Support and Enrichment (formally the Academic Support and Counseling center) continues to host the MCAT review program is a distance-learning program for all of North Carolina's post secondary students. We have assisted over 185 students since 1999 to maximize they test performance via organized review and test taking skill enhancement.

II. UNDERGRADUATE MEDICAL EDUCATION INITIATIVES:

Personal Professional Leadership Development Program (PPL)

The Personal, Professional, Leadership, Development Program (PPL), which started in 1998, pairs a clinician with a basic scientist as facilitators of groups of eight or nine randomly assigned medical students. Faculty participate in a day long facilitator's workshop. The curriculum for the faculty workshop includes the presentation of a group process model, PPL Program content, and the opportunity to practice the skills necessary for successful facilitation. The PPL experience begins during orientation week. On four of the five orientation days the students engage in a process of self-assessment, self exploration, personal disclosure, team building and the exploration of issues of diversity and professional conduct. The groups continue to meet weekly beginning the second week of the semester through the first examination period and then monthly usually following each examination period for the remainder of the first semester. Groups are encouraged to continue throughout the second semester but have the direction to develop their own schedule. Evaluations reveal that 85% of the students enjoyed and benefited from the PPL experience.

The goals of PPL are to help students feel supported and cared for during the transition into medical school while also providing a safe environment for them to learn about themselves. PPL can serve as a support group for students throughout their four years of medical education. In addition to helping students to normalize their feelings and thoughts, PPL also provides an opportunity for faculty to serve as a role model for both personal and professional development of students. The group relationships further foster collegiality amongst faculty.

Basic and Clinical Science Teaching Initiatives

Undergraduate medical education strategies include early and repeated exposure to clinical medicine in ambulatory based primary care practices; a two-year longitudinal curriculum in physical diagnosis, interviewing, counseling, critical thinking, and evidence-based medicine; a required 8 week Family Medicine clerkship; required 4 week experience on General Medicine as part of the third year Medicine clerkship; required 2 week community-based ambulatory general pediatric experience as part of the third-year Pediatrics clerkship; and a two month Primary Care requirement in the fourth year. The Doctoring 1 (first year) and Clinical Skills II (second year) courses have been well received by the students and the integration of a longitudinal thread of evidence-based medicine into these two courses has also been positively evaluated.

Doctoring 1 was initiated in the 2001-2002 academic year. Implementation of Doctoring II is planned for the 2005-2006 academic year and will replace the Clinical Skills II and Introduction to Medicine courses. The Doctoring courses were developed with input by course directors and faculty from Family Medicine, Internal Medicine, Obstetric and Gynecology,

Pediatrics, and basic science departments. The intent of Doctoring is to increase student exposure to clinical medicine and to develop skills in medical interviewing, physical examination, life-long learning, technology use, and critical thinking. Educational content in the weekly Doctoring classes and small group sessions is coordinated with information learned in concurrent basic science courses. Use of laptop computers is required in Doctoring and is designed to develop skills in information technology and information retrieval and analysis. Another innovative component of Doctoring is the Doctoring Evening Clinic where first year students see patients with Doctoring faculty preceptors in a real world outpatient setting.

The Clinical Skills II course during the second year has used a standardized patient family – the Jones family- as an innovative educational methodology to teach principles of interviewing, physical diagnosis, and patient counseling in the context of ambulatory care, and also reinforces students' understanding of the importance of continuity of care and family dynamics.

Student evaluations of the third year clerkship have indicated that our attempts to improve the experience in the Family Practice Center have begun to pay dividends. Changes in that rotation include scheduling several sessions during each rotation where an attending is assigned to work with two patients, seeing some of the attending physician's patients but with fewer patients scheduled than the attending would usually see. The third year clerks see the patients, generate a SOAP note, and present to the attending as if they were house officers and the attending were their preceptor. All patients are seen by the attending before leaving the clinic. Many students have indicated that their clerkship has resulted in an increased interest in Family Practice as a career option.

The curriculum committee with oversight over the third and fourth year curriculum has strengthened the requirements for the fourth year. All students are required to complete a four-week selective in Primary Care and a four-week selective in Ambulatory Care. The criteria for selectives included on these lists are strictly defined to ensure that these experiences are truly primary care or ambulatory. A new selective was developed and offered this year that includes service learning opportunities in the student-run Greenville Shelter Clinics, and in two rural free clinics in Fountain and Tillery, North Carolina.

Rural Health Scholars Program

Admissions into the Rural Health Scholars program sponsored by the North Carolina Office of Rural Health and Resource Development were halted in 2000 because of state policy changes. Since its inception, 55 medical student scholars from BSOM participated in this enrichment program designed to select and nurture future leaders in rural health. Twelve of the 18 scholars for the Class of 2002 are from BSOM. Activities have continued for Scholars already admitted into the program and they receive certificates of completion of the program during BSOM graduation week.

Since it inception the rural health scholars program resulted in 44% of graduates that would have completed residency training (i.e. six years after medical school graduation) having active licenses to practice medicine in our state. Amongst the group participates prior to 1998 there are 11 new primary care providers. The class of 1996 was a banner year, with nearly 75% in that year obtaining North Carolina Licenses. And over 90 % in the class of 1996 have

addresses in towns with less than 50, 000 people, representing a dramatic improvement in primary care in those underserved communities.

The last group of scholars graduated in 2000. Unfortunately, the funding for the rural health scholars program ended preventing continuation of this worth while program. Of note, discussions with BSOM Rural Health Scholars have resulted in a Rural Health Interest Group at BSOM which was given official status in early 2003.

Schweitzer Fellowship Program

Taking a similar approach, and with financial support from Pitt County Memorial Hospital, the Office of Generalist Programs works with (primarily) students in the 1st year class to encourage their participation in the Schweitzer Fellowship Program. This initiative is designed to encourage students to develop a service project to identify and work to improve healthcare needs in our inner city or rural communities. For the year ahead, 6 students have been selected by the NC State Schweitzer Committee to conduct: retinal scans for diabetic patients with referral of abnormals to certified ophthalmologists, heart health awareness education for women in a rural community, home based health education and medication review for elderly patients, adolescent health promotion through community agencies, etc. These projects follow the successes of past Brody Schweitzer Fellows whose projects have been presented at national AMSA meetings (where one received an award), and encouraged an invitation to lead an international SNMA community health study group in a foreign country. Recently, Ben Gilmore one of our Schweitzer fellows received national recognition for his North Carolina Schweitzer Project helping to enroll Latino and migrant agricultural workers in medical assistance programs. Because of his efforts Ben was awarded the Albert Schweitzer Lamberéné fellowship, a highly competitive international experience offered to only five medical students nationally.

New Initiatives

Several efforts are underway to strengthen support for community based primary care education. A Division of Health Sciences Community Based Education Advisory Group was established to facilitate communication and planning among the primary care disciplines and health professions that utilize ambulatory teaching sites in eastern North Carolina. Representatives from ECU's Schools of Medicine, Nursing, Allied Health Sciences, the UNC School of Pharmacy and EAHEC have been meeting regularly since 1998. The ninth annual workshop for community preceptors was held in February 2003, with a focus on rural community preceptors. The tenth annual workshop is scheduled for June 2004. The workshop was interdisciplinary, including preceptors who are physicians, nurse practitioners, physician assistants, pharmacists, and nurse midwives. The objectives of these workshops are to enhance the teaching, clinical, information technology, and evidence-based medicine skills of preceptors, and to support and nurture preceptors. All community preceptors receive *The East Carolina Generalist* newsletter. It is critical to the education of competent generalists, in all health professions, that the ambulatory education base in community sites is maintained, at minimum, and expanded and the sites' educational contributions enhanced. A subgroup of the Community Based Education Advisory Group has developed a computer based preceptor database. This database integrates information from BSOM, the Office of Generalist Programs, EAHEC Office of Regional Primary Care Education and the Schools of Nursing and Allied Health, and is now

being populated. The Office of Generalist Programs was established in 1996 to ensure integration of curricular innovations, student and faculty programs, and premedical initiatives, into Academic Affairs ~~in~~ at BSOM. It is now directed by the newly endowed Jefferson-Pilot Professor in Primary Care, Assistant Dean for Generalist Programs.

Interdisciplinary Programs

The Interdisciplinary Rural Health Training Program continues as an innovative interdisciplinary educational program for students from several health professions, including medicine, nutrition, health education, occupational therapy, physical therapy, nursing, physicians' assistant, social work and pharmacy. Programs in Duplin and Beaufort counties have been underway for the past three years. An additional educational site for a similar program has now been developed in Bertie and Hertford counties. This interdisciplinary approach to educating health professional team members together in community based ambulatory settings has the potential to positively impact specialty and practice decisions by students from the disciplines involved. These two programs are being evaluated and may serve as models for replication of this educational approach in other areas of eastern North Carolina.

III. GRADUATE MEDICAL EDUCATION INITIATIVES:

Initiatives in Graduate Medical Education begin well prior to the matriculation of new residents at the institution. Through the Office of Generalist Programs, a Primary Care Residency Program Directors Group was established in the last Academic year to develop tools and programs for improved recruitment. Participation in Residency Fairs has been expanded and a CD is being prepared for distribution at those sites, as well as to residency program directors nationally in the primary care specialties. It will also be mailed to prospective residents inquiring about the programs at this institution. The CD will provide for them, not only information about the specific primary care residency, but also information about the Brody School of Medicine, Pitt County Memorial Hospital, University Health Systems of Eastern North Carolina, and the Greenville Metropolitan area including demographics, opportunities for spouses/significant others, community and close by recreational activities, etc. Plans are underway to increase our communication with North Carolina students who attend medical school outside the state and also to establish special interview days in the primary care residencies for students from North Carolina medical schools, to increase their interest in matriculating at Brody/Pitt County Memorial Hospital.

Activities to support residents in primary care include joint sessions on practice management, a longitudinal home care curriculum, leadership and management training for the primary care chief residents, and research on factors that influence resident career plans. An innovative new collaborative program, initiated in 1998 with the ECU School of Business, enables a resident to enroll in a 42 credit hour MBA program, which can be completed part-time or after completion of residency. Tracking of graduates from the predoctoral and residency programs reveals that from 1981-1997, graduates from BSOM or its affiliated residency programs were more likely to practice in medically underserved and non-metropolitan areas in North Carolina and eastern North Carolina. Initiatives to facilitate the retention of graduates include the provision of community ambulatory experiences and dissemination of information about financial incentive programs for practicing in primary care in underserved areas in North Carolina. For the past two

years a lunchtime Medical Spanish class has been provided for primary care residents and many medical students have participated as well.

The telemedicine program, which links distant sites with BSO for consultation and for continuing education, is another critical initiative that reduces the isolation of physicians and other health professionals practicing in rural areas. The residents experience distance learning during Departmental Primary Care Conferences and Grand Rounds, at least three times a week. Those residents in the rural sites have available to them consultation with BSOM sub-specialists in many areas including Maternal-Fetal medicine, Dermatology, Cardiology (both adult and pediatric) and Allergy &, Immunology.

This entire telemedicine program is being expanded to bring all of our non-salaried community faculty (affiliate faculty) in closer contact with the School. Over the course of the next year these physicians will be provided with access to the BSOM e-mail system, and will also be able to make referrals of their patients and access information on their patients, subsequent to those referrals, through a link from their office to our electronic medical record system.

Our primary care clinical departments have produced many practitioners in North Carolina since the last report. Pediatrics graduates since 1999 total 41, 32 are in primary care practice and 18 (56 percent) are in practice in North Carolina and almost 90 % are in communities of less than 100, 000. Internal Medicine has also produced a large proportion of primary care practitioners in North Carolina with over 50 percent (19/35) serving our state since graduating since 1999. If the service potential for each practitioner is 1779* people this equates to 65,000 more citizens with access to primary care physicians since our last report. *(primary care benchmarks from the Sheps Center at UNC - 1779 NC urban population/ primary care provider M.D.)

A recent initiative involves our Masters of Public Health Program. We are finalizing plans for a dual MD/MPH program and anticipate enrolling our first students during the next twelve months. Certainly the MD/MPH graduate will be capable of providing primary care in both practice and policy arenas.

IV. PRACTICE ENTRY AND SUPPORT INITIATIVES:

The BSOM Office of Generalist Programs and Health East, a subsidiary of University Health Systems of Eastern Carolina, are collaborating to support practicing primary care physicians and to facilitate physician retention in eastern North Carolina. Support for regional physicians is provided through practice management services, and education, as well as assistance in primary care physician recruitment. Support of community teaching sites link physicians to the medical center and provides peer interaction, continuing education, an opportunity to teach and to participate in research, and the respect and prestige conferred by association with an academic health center, including, for those engaged in teaching, an affiliate faculty appointment.

V. ADDITIONAL PROGRAMS:

BSOM continues to be a co-supporter with Pitt County Memorial Hospital EAHEC of the Annual Recruiting Fair held every fall. This event provides an opportunity for community hospitals in eastern North Carolina to meet students and residents in the educational programs at Brody/PCMH. The students and residents learn about the health care workforce needs of the communities, and the communities have an opportunity to begin to develop relationships with students and residents. It continues to be well received by the hospitals and the students and residents, and several hospitals have recruited physicians for their communities as a result of the Recruiting Fair.

Primary care based student organizations, including Interest Groups in Family Medicine, Pediatrics, and Medicine; continue to be active at BSOM. An OB/GYN Interest Group was formed 2 years ago and is now meeting regularly. A Rural Health Interest Group was established by the students and a variety of activities took place in the-2002-2004 academic years. The school supports student travel to regional, state and national meetings as a component of students' professional development. The Office of Generalist Programs supports many of the functions of these interest groups with the director serving as mentor or co-mentor to four of them.

SUMMARY

The Brody School of Medicine at East Carolina University continues to be committed to its legislatively mandated mission to educate primary care physicians to meet the health care needs of Eastern North Carolina. Through many sound initiatives and strategies that we have continued over several years, and the addition of new innovative strategies, BSOM has been able to maintain, or even slightly increase, the percentage of medical students who choose to enter primary care residencies, and who ultimately practice primary care. In the 2004 National Residency Match Program (NRMP) the percent of students selecting primary care was 58% with OB/GYN and 51% without OB/GYN. We continue to be proud of the percent of our graduates (76%) who are pursuing primary care against what continues to be national downward trend in primary care training. BSOM continues to strive to develop and implement strategies that will increase the number of medical students and graduates who return to eastern North Carolina, and more specifically to underserved areas in the region. Each year we add to the available pool of primary care providers in our state directly and indirectly through the graduate and undergraduate medical education programs. Although it is difficult to determine quantitatively we also add to the poll of primary care providers who enter our state from other areas because of the medical school attraction to private physicians from other states who did not train in North Carolina. Although the challenges of the health care environment put increasing pressures on revenues and the pressure to provide increasing levels of clinical service competes with time for education and research, BSOM continues to be mission focused, working to increase the quantity and quality of primary care providers in North Carolina.

Report to the Board of Governors
of The University of North Carolina

Primary Care Medical Education Plan
2004 Update

The University of North Carolina at Chapel Hill

School of Medicine

William L. Roper, M.D., M.P.H.
Dean of the School of Medicine
Vice Chancellor for Medical Affairs
CEO UNC Health Care System

Robert N. Golden, M.D.
Vice Dean
Professor and Chair, Department of Psychiatry

Cheryl F. McCartney, M.D.
Executive Associate Dean for Medical Education
Professor of Psychiatry

April 2004

A report in response to General Statue 143-613 as amended by Chapter 507 of the 1995 Session Laws (House Bill 230) of the North Carolina Assembly

2004 Update: Primary Care Education Plan

The University of North Carolina at Chapel Hill School of Medicine

INTRODUCTION

The University of North Carolina (UNC) is committed to providing physicians to serve the health care needs of the citizens of North Carolina. Of the 16,392 physicians practicing in North Carolina in 2001, 26.8 percent or 4,396 of them were educated in North Carolina. Of the physicians receiving their medical education in North Carolina, 44.3 percent of these were educated at UNC. UNC is a national leader in primary care education and was the only medical school in North Carolina to be ranked this year in the top 15 in primary care by U.S. News and World Report (1).

In 1994, the UNC School of Medicine (SOM or the school) submitted a detailed plan to the Board of Governors for increasing to 60 percent the proportion of its graduates entering primary care practice. The range of initiatives designed to achieve the 60 percent goal detailed in the 1994 and 1996 reports to the Board of Governors were derived from an institutional planning process spanning 10 years. Development of these initiatives is an ongoing process at the UNC SOM. Our initiatives for increasing the number of primary care physicians practicing in North Carolina include pre-medical programs and programs aimed at promoting primary care as a career choice for medical students, and extend to programs aimed at retaining primary care physicians practicing in North Carolina. For the past two years, at a time during which the numbers of U.S. seniors going into primary care specialties have declined, the number of our graduating seniors going into primary care has hovered around 50 percent. Specifically, in 2003, 45 percent of our graduates entered primary care and in 2004, 53 percent entered a primary care specialty. Our goal and mandate is for 60 percent of our seniors to select primary care specialties. This document will review the programs we have in place to encourage primary care as a career choice, some of the factors affecting us and contributing to the declining numbers of U.S. seniors matching in primary care specialties, and our new initiatives developed to foster interest in primary care and generalist careers.

Nationally, the numbers of students going into primary care specialties peaked in 1997 (2). Primary care specialties, as defined by the North Carolina State Legislature, include Family Medicine, Internal Medicine, Obstetrics/Gynecology, Pediatrics, and Medicine/Pediatrics. In 2003, primary care residency matches were down nationally for the sixth straight year (2). Nationwide, the numbers of medical students choosing Family Medicine peaked in 1997 when a record 2,340 U.S. seniors filled Family Practice positions (2). The numbers of students going into Obstetrics and Gynecology also peaked in 1997, while those going in to Internal Medicine peaked in 1998 and Pediatrics peaked in 1999 (2). At UNC, the numbers of seniors going into Family Medicine peaked in 1998 when 20 percent of the class went into Family Medicine. The number of U.S. seniors matching in primary care Internal Medicine programs has also declined since 1998 (2). Figures 1 through 4 (Attachments) illustrate the comparison between the percent of students in the U.S. and at UNC entering Internal Medicine, Pediatrics, Family Medicine, and Obstetrics/Gynecology from 1989 through 2003.

A complex set of factors influence a student's career choice including personal social values, institutional culture, curriculum design, role models, and market forces (5). The SOM can do little about market forces and has been focusing on admissions criteria and curricular programs that will promote interest in primary care specialties. We suggest that the explanation for the recent decline in interest among U.S. seniors in primary care residency training programs is multifactorial and may include:

- a backlash from patients and physicians against gatekeepers and restricted access
- income disparities between primary care physician and specialists
- the perception that choosing a specialty career may permit greater control over one's professional life thus allowing more time for family and personal endeavors
- the recent tightening of the job market for primary care physicians
- the threat of competition from physicians extenders (nurse practitioners and physician's assistants)
- the growth in job opportunities for specialists (3,4,6,7,8,9)

Another factor that may be negatively influencing primary care as a career choice is Medicare funding for graduate medical education (GME). Currently, Medicare reimburses teaching hospitals for the cost of GME through two payment streams: direct medical education (DME) and the indirect medical education (IME) adjustment. Medicare determines a resident's training program's eligibility for graduate medicine subsidy GME funding based on the resident's internship year and the time it will take for the trainee to become board eligible. The trainee's eligibility is determined once and does not change if he/she switches specialties. For example, an intern who begins a general surgery residency will be board eligible for five years of funding because it takes five years of training to become board eligible in general surgery. The trainee will remain eligible for five years of DME funding even if he/she switches to internal medicine which takes only three years of training for board eligibility. In contradistinction, a resident who begins an internal medicine training program may face difficulty switching into general surgery because he/she will only be eligible for three years of DME funding. Some residency program directors are encouraging students to accept preliminary years in general surgery, instead of internal medicine, so that their institutions will not face a reduction in Medicare DME funding.

PREMEDICAL PREPARATION AND ADMISSIONS

Studies have shown that primary care role models are an important influence in encouraging primary care as a career choice and that dedication to community service predicts primary care practice choice (6,7,10). These studies have led us to make the following adjustments to our admissions process:

- Appointment of a general internist as Associate Dean for Admissions and chair of the Admissions Committee
- Consideration of applicants' demonstrated dedication and experience in community service in the SOM selection process for admission.

The SOM actively recruits qualified underrepresented minority (URM) students in the state, region, and nation to better enable us to serve the health care needs of North Carolina's increasingly diverse population. Studies have shown that members of minority groups are more

likely to treat minorities and that patients have better access to health care when same-race physicians are available (11,12). Minority patients are more likely to disclose information to minority physicians and are more compliant with physician instructions (12, 13, 14). All of these factors lead to an improved quality of care for minority patients. Our commitment to increasing the number of underrepresented minorities in primary care is reflected in our establishment of programs that improve the preparation of minority applicants for careers in the biomedical sciences and actively recruit URMs to the health care professions. The diversity among UNC medical students enhances the quality of our learning environment because students are exposed to cross-cultural experiences among their peers. The resulting increase in cultural competency among our students leads to improved quality of care for minority patients.

The SOM's Office of Educational Development developed and conducts programs designed to enhance the competitiveness of disadvantaged and URM applicants to medical school. The centerpiece of these efforts is the **Medical Education Development (MED) Program**, established in 1974 to prepare rising college seniors and college graduates who aspire to attend medical or dental school. This nine-week summer program simulates the medical school environment with rigorous coursework in the basic sciences, training in test-taking skills, and academic counseling. The program, funded by a federal Health Careers Opportunities Program grant, serves students from disadvantaged backgrounds and underrepresented minority groups. In operation since 1971, the program has served a total of more than 1,800 participants as of 2003. Approximately 82 percent of the program graduates applied to health professions schools and 88 percent of former participants who applied to health professional schools were accepted. Among those who were North Carolina residents, former participants have represented 72 percent of minority matriculates to the UNC Schools of Medicine and Dentistry. Priority for admission into the MED Program is given to North Carolina residents. MED participants have chosen primary care careers in underserved areas in greater numbers than have non-MED participants.

The Office of Educational Development also offers the **Research Apprenticeship Program** for rising high school juniors and seniors to increase the number of disadvantaged students who pursue careers in the science fields. The seven-week program exposes students to basic and/or clinical research through an apprenticeship experience. Other UNC-CH programs include the **Summer Enrichment in Mathematics and Science Program** for high school students and the eight-week **Science Enrichment Program** for rising college juniors and seniors.

The Office of Educational Development holds a grant from the U.S. Health Resources and Services Administration funding the **UNC Center of Excellence**. This grant enhances efforts of the Office of Educational Development to prepare disadvantaged students for medical school, strengthen the cultural competence of all medical school graduates, provide community-based primary care experiences for students, recruit URM faculty, and encourage student and faculty research on minority health issues.

THE MEDICAL SCHOOL CURRICULUM

The First Two Years

Studies have shown that longitudinal experiences in primary care promote interest in primary care as a career choice (10). **The Introduction to Clinical Medicine (ICM)** course, implemented in 1995, represents about 18 percent of the instructional hours in years one and two of the medical school curriculum and includes interviewing, physical diagnosis, the doctor/patient relationship, and clinical reasoning. This course incorporates longitudinal experiences in primary care in the form of its five community weeks. Students work directly with a generalist role model and experience primary care practice in a community setting. Each year, between 215 to 225 primary care practitioners participate as preceptors, each hosting a single student for five separate weeks during the first and second years. The Area Health Education Centers (AHEC) Program was launched in the early 1970s and all nine of the AHEC-based Offices of Regional Primary Care Education (ORPCEs) support this effort by helping to identify potential physician preceptors in their regions, and by providing coordination and logistical support for the students all over the state of North Carolina. In addition, 32 primary care faculty tutors in Chapel Hill teach small group seminars in the ICM course each week during the year. Our annual analyses of the influence of the SOM curriculum on our students' career choices indicate that, for students with an initial interest in primary care, the community-based clinical experiences provided by the ICM course are strong positive influences toward primary care careers.

During the summer following the first year, students are encouraged to pursue opportunities that cultivate their career interests. The Department of Family Medicine offers the elective **Working with the Underserved Preceptorship Summer Program**, a six-week summer program that combines a week-long intensive training in medical Spanish with a five-week attachment with a practicing community physician who cares for an underserved population. Students can earn fourth-year elective credit for this program.

The Program on Prevention encourages students to consider prevention in all patient interactions, regardless of the specialty. Because a large number of prevention activities take place in the primary care setting, the Program spends a large amount of time encouraging prevention in primary care. Through the Prevention Syllabus, the Program offers instructors in all courses materials to discuss prevention. In addition, the Program assists the ICM tutors in helping students develop skills in counseling for lifestyle change and assists the clinical epidemiology course instructors in teaching students about the principles of screening. The Program is also responsible for the Breast Cancer Case that is discussed during January of the first-year curriculum. This popular activity involves a case with two components, an initial primary care component and a second specialty component. The primary care component receives equal billing with the specialty component, and the case discussion emphasizes the intellectual and personal satisfaction inherent in the primary care and prevention roles. The Program has also accepted a leading role in the Capstone Clinical Case Course for second-year students, which will include prevention in the primary care setting as a primary theme.

The SOM has recently initiated the **Career Opportunity Series (COS)**. The COS consists of lunchtime lectures and panel discussions about pursuing careers in different medical specialties. This program is coordinated by the Whitehead Medical Society, student specialty

interest groups, and the Program on Prevention. On March 31, 2004, Dr. Fitzhugh Mullan, Professor of Pediatrics at George Washington University, former head of the National Health Service Corps, and author of a recent book on primary care, lead a COS session on pursuing a career in primary care. His presentation was extremely well received and approximately 190 students attended his lecture.

The Third Year

Studies have shown that a student's experience in family medicine has a significant impact on generalist career intentions and that schools with family medicine departments and required clerkships tend to have more of their students enter primary care specialties than schools without this clerkship (17,18). UNC's six-week **Family Medicine Clerkship** is a requirement for all medical students during their third year. The clerkship takes place at 60 community practice sites throughout the state, coordinated through six of the North Carolina AHEC Programs and their Offices of Regional Primary Care Education (ORPCE).

To expose students to primary care pediatrics and internal medicine practices, all students are required to complete two weeks of the **Pediatrics Clerkship** and four weeks of the **Medicine Clerkship** in an outpatient, ambulatory setting, usually at a community-based site coordinated through the AHEC and ORPCE programs. The Obstetrics/Gynecology clerkship also has an outpatient, ambulatory care component. Again, our analyses of curricular influences on career choice confirm that the Family Medicine, Medicine, Pediatrics, and Obstetrics/Gynecology clerkships are strong positive influences toward primary care careers, especially for students who entered medical school with an interest in primary care.

The Fourth Year

In the fourth year, students are required to take an **Ambulatory Care Selective**. This rotation comes at a time when students are refining their skills and are ready to function independently. Rotations in ambulatory care at this stage have a significant impact of the choice of a generalist career (16). During the selective, students make an independent learning plan to improve their clinical skills, explore community resources, and increase their understanding of the role of the practitioner and the practice in caring for the illnesses of patients, while promoting the health of patients, their families and communities. Over 150 community-based primary care practitioners participate as preceptors at over 40 sites, each hosting one or more students for four weeks during the fourth year. All nine of the AHEC-based Offices of Regional Primary Care Education (ORPCEs) support this effort by helping to identify potential preceptors in their regions, and by providing coordination and logistical support for the students. Six primary care faculty in Chapel Hill act as departmental coordinators for the Ambulatory Care selectives.

A number of **elective courses in primary care disciplines** are available to fourth-year students. As a reflection of our excellence in rural health and family medicine, the Department of Family Medicine offers over 10 electives in rural and other primary care settings in North Carolina. These include courses such as Family Medicine and Community Fieldwork, Western North Carolina Adventure in Family Medicine, Aging and Health, and Principles & Practice of Alternative & Complementary Medicine. Other electives relevant to training in primary care are offered through our Department of Medicine, including Clinical Experience in Community Medical Practice, Rural and Underserved: An Interdisciplinary Approach to Health Care, and

Interdisciplinary Teamwork in Geriatrics. Similarly, our Department of Obstetrics and Gynecology offers the elective, Community Obstetrics and Gynecology.

Medical Spanish

North Carolina's Latino population increased by 94.7 percent in the 1990s. The Latino community here faces both language and cultural barriers to the state's health care system. With the great influx of Latino patients seen in primary care settings, it is important to train physicians to communicate with these patients. To address this need, UNC SOM students and faculty have created a series of beginning, intermediate, and advanced elective, non-credit medical Spanish and culture courses taught by a faculty member from the Department of Romance Languages. The intermediate and advanced classes have been offered since January 2000 and the beginning class since August 2002. Students learn basic medial terminology in Spanish, gain confidence in working with Spanish-speaking patients, and learn how the culture of Spanish-speaking patients may affect their interactions in the clinical setting. In addition, health affairs students and social work students are eligible to take online courses in intermediate and advanced Spanish for health care designed to improve Spanish language skills and awareness of Latino culture.

Fourth-year students have an opportunity to practice and improve their knowledge of conversational and medical Spanish through an international elective in Peru. This international exchange program with the *Universidad Nacional de Trujillo* in Trujillo, Peru allows students to join the medical team at a university hospital for one or two months. Students select an area of study such as Internal Medicine, Dermatology, Obstetrics/Gynecology, or Ophthalmology. An additional Spanish language and culture course currently is being developed through the UNC Office of the Provost. *Au Su Salud* is a four-unit online program focusing on Spanish language as used in health care settings. Its development is supported by a grant from the U.S. Department of Education's Fund for the Improvement of Post-secondary Education.

MD/MPH Combined Degree Program

The **MD/MPH program** seeks to train leaders for the evolving health care environment of the 21st century. The goal is to provide students with the opportunity to integrate the individual patient perspective with that of the population sciences, thus strengthening each. In 2002, fourteen students received an MPH (or MSPH) degree along with their MD degree and in 2003, six students completed both degrees. Fourteen students are currently enrolled in the MD/MPH program. The interdisciplinary **Health Care and Prevention MPH Program** (under the School of Public Health Public Health Leadership Program) was designed specifically for medical students and clinicians who wish to broaden their perspective and increase their career options. The Health Care and Prevention MPH Program is a joint effort between UNC's School of Medicine and School of Public Health. The goal of the program is to prepare students for leadership roles in a variety of clinical settings, whether as practitioners in their own practices, or as leaders of primary care group practices or health care plans.

Faculty Development

In addition to fostering programs in our curriculum to promote interest in primary care specialties, we have also focused on programs aimed at retaining primary care physicians in generalist practices and in helping primary care physicians become effective teachers. To

effectively prepare students for contemporary practice has required a shift from hospital-based to community-based education. In these "schools without walls," it is important to ensure the quality and consistency of educational experiences across sites and support the clinicians who volunteer to teach our students. To address this need, we have instituted faculty development programs for community practitioners who serve as part-time faculty. Programs for these faculty, who are busy caring for a large number of patients, must use non-traditional formats that are efficient, flexible and easily distributed. The **Expert Preceptor Program**, developed by the Office of Educational Development in collaboration with the AHEC Program, uses several different formats to meet the needs of widely dispersed community faculty. Preceptors may complete the program via paper-and-pencil independent study modules, by enrolling in seminars offered by the regional AHECs, or on the World Wide Web using a program called the **Expert Preceptor Interactive Curriculum** (**EPIC)**, available at http://www.med.unc.edu/epic. EPIC was developed by the Office of Educational Development and Office of Information Systems, with funding from the U.S. Department of Education's Fund for the Improvement of Post-Secondary Education (FIPSE).

The EPIC program consists of eleven modules aimed at helping preceptors develop their skills in clinical teaching and in teaching students about issues in community practice. Each of the first three modules focuses on one critical skill related to clinical teaching in the community practice setting. Topics include (1) setting the stage, (2) effective teaching, and (3) evaluating performance and giving feedback. The remaining eight modules focus on methods for teaching contemporary health care issues. These modules address (1) interdisciplinary teamwork in health care, (2) information technology, (3) evidence-based care, (4) clinician-patient relationships, (5) managing care in the changing practice environment, (6) health promotion/disease prevention, (7) working with the community, and (8) culturally appropriate care. Participants earn continuing medical education (CME) credits for the completion of each module. "Expert Preceptor" designation is available to preceptors who complete eight of the eleven modules.

The **Visiting Clinician Program (VCP)** brings practicing primary care physicians from across North Carolina to the UNC campus to work one-on-one with clinical faculty and learn about topics that the participants themselves have identified as their desired learning focus. Clinicians who serve as preceptors for students' community-based clinical rotations are especially recruited for the program. Participants typically choose to study topics that represent dominant or emerging clinical problems within their practice populations. Upon enrollment, each participant chooses from a list of approximately 200 learning opportunities. Program staff then arrange for four one-day visits over a one-year period with faculty in the chosen areas to create an individualized program of continuing education.

Since its inception in 1996, the VCP has served 116 primary care clinicians from across the state. Topics that have been chosen for study range from diabetes to pain management to high-risk obstetrics to computing in medical care. Participants report that the VCP helps them develop and confirm their knowledge and skills in a focused and relevant way. Faculty hosts report their appreciation for the opportunity to develop relationships with community clinicians and learn their perspectives. The VCP resides in the Office of Educational Development in the

School of Medicine and is described at http://www.med.unc.edu/oed/vcp/. The program is currently funded by external grants.

In addition to EPIC and VCP, another resource for community-based primary care faculty preceptors is ***The Front Line***, a quarterly newsletter published by the Office of Educational Development. This publication, also available online at http://www.med.unc.edu/oed/frontline/, provides information to help these faculty improve their teaching of UNC medical students on community rotations.

SERVICE LEARNING OPPORTUNITIES FOR STUDENTS

Education for Lifelong Service

In 2003, the SOM received a grant from the Bureau of Health Professions, Department of Health and Human Services, for a three-year program aimed at preparing medical students to address the disparities in health care experienced by the underserved. This program, known as **Education for Lifelong Service (ELS)**, is a joint program between the Department of Family Medicine and the Office of Student Affairs. The ELS mission is to encourage students, faculty, and the community to come together to address the needs of underserved and vulnerable citizens through direct service and educational programs. Administrators hope to increase the visibility of community service within the UNC School of Medicine by collaborating with Health Affairs and organizations on the main campus that support community service and service learning opportunities.

The ELS Program consists of a required curriculum component for first- and second-year students, advanced curriculum options, extracurricular activities, and an ELS Office. For first- and second-year students, four ELS content areas are incorporated into the curriculum: knowledge and understanding of communities with an emphasis on care to the underserved, cultural competence including an emphasis on social context in the delivery of care, effectively interacting with communities in meeting the health needs of underserved populations, and leading effectively within communities. For students considering community service, the ELS Program can provide a list of community agencies that need volunteers; connect students with faculty mentors; and offer electives including Working with the Underserved Preceptorship, Advanced Leadership Skills in Community Service, and Rural and Underserved: An Interdisciplinary Approach to Health Care. The program also targets student leaders, offering to help connect groups with community projects, identify resources to carry out service projects, offer workshops on leadership transition, and collaborate on service projects. The ELS Program also helps connect faculty members with like-minded faculty and students and helps community groups find students to work on projects. The ELS extracurricular activities include a speaker series, Voices from the Community, which introduces and demonstrates institutional value in community service efforts, organizations, and leaders. In addition, the program provides students with faculty mentors who are involved in community service or who are community preceptors. Finally, the ELS Office will coordinate and centralize the SOM's existing disparate community service activities thus providing "one-stop shopping" for students, faculty and community agencies looking for partners in caring for the underserved. As a result of the ELS office, direct

service to underserved and vulnerable populations in North Carolina is being increased through student placements.

Student-run Organizations

There are several student-run organizations that give students learning opportunities in primary care. These include organizations focused on providing primary care to underserved patients, teaching youth about health issues and health careers, and providing medical students with learning opportunities in primary care.

Medical students themselves have conceived, planned and implemented many of the community service efforts emanating from the School of Medicine. In some of these programs, students provide health care services under the supervision of UNC faculty and community preceptors who volunteer their time. A leading example of this type of program is the **Student Health Action Coalition (SHAC) Clinic**, which celebrated its 35th anniversary in 2003. It is the oldest continuously operating, student-run free clinic in the country. In November 2002, the SHAC Endowment Fund was formed with a private donation of $10,000 to endow all of the SHAC programs.

The SHAC Clinic is multidisciplinary and includes students from the Schools of Medicine, Public Health, Pharmacy, Dentistry, Nursing, and Social Work, and the Division of Physical Therapy. This multidisciplinary environment replicates the team approach taken by many contemporary primary care practices. In 1999, students added **mobile SHAC** to provide well-person checkups and social support to underserved senior citizens in their homes. Students are assigned to visit a patient each month for a one-year period. At these visits, students interview patients to keep abreast of health problems, check vital signs and medications, and assess the safety level in the home. In 2003, SHAC leaders developed **SHAC Outreach** to build healthier communities through education and community-based health promotion. SHAC Outreach recruits students from the UNC Schools of Dentistry, Medicine, Nursing, Pharmacy, Public Health, and Social Work, as well as the Division of Physical Therapy, to partner with members of underserved communities. Through these partnerships, students and community members develop and implement a community health promotion program to address a specific concern of that community.

Two other elements of the SHAC program are **Health for Habitat** and a variety of special programs offered by SHAC including the annual **Kindergarten Clinic**. Health for Habitat is a partnership of the University of North Carolina Schools of Pharmacy, Public Health, Dentistry and Medicine, joined with Habitat for Humanity of Orange County and a Habitat Family to finance and construct homes in Orange County. Health for Habitat received a Community Grant from the American Association of Medical Colleges. The Kindergarten Clinic offers physical exams and vaccinations for children entering public school.

Through the UNC SOM chapter of the **North Carolina Student Rural Health Coalition** (NCRHC), students provide primary care, lab services and health education at a free clinic for low-income, rural patients in the Bloomer Hill (Edgecombe County) community. The NCRHC is committed to teaching its members about conditions that contribute to poor health, developing

skills and sensitivity needed to address these conditions, and introducing members to related career options.

Because of the growing Latino population in the surrounding area, students formed the **Spanish-speakers Assisting Latinos Student Association (SALSA**) to address the health departments' need for Spanish-speaking health care providers and interpreters. SALSA also serves the SHAC Clinic.

The **Health Professions Recruitment and Exposure Program (HPREP)** and the **Youth Science Enrichment Program (YSEP)**, sponsored by our chapter of the **Student National Medical Association (SNMA)**, seek to increase minority presence in the health professions. HPREP introduces high school students to career options in the health professions by teaching them about various medical conditions that exist in their families and communities. This project was recognized in a national competition when it won an award from the Student National Medical Association at its 1998 annual meeting. YSEP targets minority elementary students to stimulate their interest in the sciences and health professions. The UNC chapter of the **SNMA** also holds blood pressure screenings and a health fair to increase the awareness of preventable minority health problems such as diabetes, hypertension, and HIV.

Through **Students Teaching Early Prevention (STEP on AIDS and STEP on Heart Disease)**, medical students teach middle school adolescents about the prevention of AIDS and heart disease.

Mentoring, by medical students, has been combined with health education in the **Pediaction** program, which works with local middle school students who have been identified at risk for school failure or family problems.

A variety of student-run interest groups help our students to explore careers in primary care. These groups typically meet monthly to hear a guest speaker and include the **Family Medicine Interest Group, the Internal Medicine Interest Group, the Pediatric Interest Group, and the UNC Chapter of the American Geriatrics Society**. In addition, **Prevention in Action (PACT)** provides information and educational opportunities in preventive medicine for medical students. PACT works with interest groups and supports its own projects such as promoting child safety and wellness in the local school system through the **RiskWatch** program and providing health education at local community centers.

The aim of the **Awareness for Domestic Violence and Sexual Assault (ADViSA)** is to educate health professionals about how to recognize victims of domestic violence so that they may support and help their patients survive these situations. The group is responsible for a required part of the ICM curriculum. The DVAC also sponsors a domestic violence training workshop, as well as talks on domestic violence.

School-Sponsored Service Learning Opportunities

The Program on Aging offers several opportunities for students interested in primary care. This program is partially funded by a $2 million dollar grand from the Donald W. Reynolds Foundation. The goals of their programs are to develop innovative programs of geriatrics and gerontological education for physicians and multidisciplinary health professionals in training and in practice, promote collaborative research in aging in basic and clinical services, provide

leadership for development of interdisciplinary clinical services for older patients, and provide consultation to public and private agencies which bear primary responsibility for providing services to older citizens. The program holds an annual continuing education conference and provides information via its web site (www.med.unc.edu/wrkunits/3ctrpgm/aging/) on topics relevant to geriatrics such as polypharmacy and nonpharmacologic interventions in dementia. The Program on Aging presents a day-long program for first-year students that serves as an introduction to aging. Through the Program on Aging, medical students are able to take a variety of fourth-year electives and to participate in the Hubbard Program for Collaborative Clinical Practice in Geriatrics, an interdisciplinary team training program focused on geriatric assessment. Students gain knowledge and skills in collaborative interdisciplinary practice applied to the care of geriatric patients in the context of family, home, and community. In addition, the team's work contributes to patient care by providing comprehensive assessments of patients referred to the team and recommendations to referring caregivers.

The Program on Aging research staff also works individually with interested students and fellows to mentor **independent study and research** in geriatrics. In recent years, students have investigated topics such as the prevention of osteoporosis in Wayne and Pender Counties and screening for dementia.

The UNC School of Social Work sponsors the **Summer Team Experience**, a six- to twelve-week interdisciplinary problem-solving program in which students live in a rural community and work in a rural health center, while researching and designing solutions to address a community health problem. Disciplines involved in the program include audiology, dentistry, medicine, nursing, occupational and speech therapy, physical therapy, pharmacy, public health, and social work. Student teams have worked on projects such as development of a caregiver support program in rural Northampton County, development of interventions to prevent complications of diabetes, determination of access to care in rural Halifax County, development of strategies to provide medicine to indigent patients, and improvement in the nutritional status of elderly residents in rural areas.

School of Medicine Recognition Activities Honoring Community Service

Studies have shown that dedication to service predicts primary care choice. One of the main goals of the School of Medicine is to instill in students the ethic of service. The **Eugene S. Mayer Community Service Honor Society** was created in 1994 to honor students' outstanding contributions in community service work. Since its founding, the Mayer Society has inducted nearly 300 students and has showcased their contributions at an annual **Community Service Day.** The Mayer Society has recently begun to induct community preceptors and to honor them at Community Service Day. The Society also collaborates with students from other health affairs schools to produce a journal, ***Insight Out,*** which is dedicated to exploring the value of community service.

The **Zollicoffer Lecture** was established in 1981 by the Student National Medical Association in honor of Dr. Lawrence Zollicoffer, a graduate of the UNC School of Medicine. The purposes of this event are to increase awareness of minority health and community issues and to introduce students to dynamic minority role models in the field of medicine. The lecture recognizes Dr. Zollicoffer's commitment to civil and human rights, and commemorates over 40

years of minority presence in the school. In addition, each year a student is awarded the **Lawrence Zollicoffer Community Health Fellowship** funded by faculty donations. The purpose of this fellowship is to encourage medical students to learn about health issues related to minority and underserved communities through a community service project of the student's own design. Each year the Zollicoffer Lecture and banquet are held on a Friday and our Community Service Day is held the following day. Our annual applicant appreciation day for underrepresented minority students also coincides with these two events, enabling our applicants to become familiar with some of the community programs in which students are involved.

Our annual **Student Research Day,** sponsored by the Whitehead Medical Society (student government) and John B. Graham Student Research Society, includes epidemiological and clinical research as well as basic science research. Topics such as "Long-Term Effects of Education and Prenatal Care on Mothers and Their Children Seen at a Health Department," "Using the Primary Care Visit as an Opportunity for Preconceptional Counseling"and "Syphilis Among Males 18-30 in 40 North Carolina Counties" demonstrate our students' interest in integrating basic science concepts, population science, and clinical practice.

Each year, just prior to commencement, the SOM holds the **Senior Awards** ceremony Recipients are selected from nominations by members of the graduating class, nominations by faculty, or selection by academic departments. Several of these awards recognize community service or dedication to primary care, including the Family Medicine Student Award, the Cecil G. Sheps Award, the Leonard Tow Humanism in Medicine Award, the Cuthbertson Award and the Danton Award.

The June C. Allcott Fellowship is awarded to two students each year who have demonstrated excellence in community service and financial need.

UNC RESEARCH RELEVANT TO PRIMARY CARE

UNC's **Cecil G. Sheps Center for Health Services Research** encompasses an interdisciplinary program of research, consultation, technical assistance, and training focusing on the accessibility, adequacy, organization, cost, and effectiveness of health care services. One of the center's main research programs is in primary care and the health professions. Historically, much of the Sheps Center's research in primary care has addressed the access, personnel, organization, quality, and cost issues that pertain to health services delivery, especially in rural areas. Current research efforts in this program include addressing issues of recruitment and retention of health care practitioners in rural practice, as well as the projection of need and demand for health professional personnel.

Recently published work on retaining physicians in primary care included a longitudinal study of rural physician retention that seeks to identify factors associated with longer retention, characterize how interactions between the physician and the community can predict retention rates, and assess the accuracy of rural physicians' estimates of their future practice employment tenure (17). Another recently published study identifies, describes and compares scholarship, loan, loan-repayment, and similar programs run by states that provide support to primary care providers in exchange for service obligations in needy communities (18, 19).

ADMINISTRATIVE MEASURES

Rural and Underserved Task Force

To improve programs focused on rural and underserved populations, the School of Medicine formed the Rural and Underserved Task Force. This task force consisted of the chairs from our Departments of Medicine, Pediatrics, Obstetrics/Gynecology, and Surgery, as well as the Associate Dean for Student Affairs and the Dean of the School of Nursing. The group developed a list of recommendations presented in September 2002 that included culture changes through the creation of a structure to celebrate service to the rural and underserved in the state; augmentation of activities such as student-run free clinics; elimination of disdain for practicing community clinicians; curricula changes through the encouragement of student participation in service-learning projects; required exposure to both Hispanic language and culture and to rural culture and health care systems; development of a more formal network of teaching practices, emphasizing quality over quantity in community-based sites; development of a track for students interested in practice in rural and underserved settings; and publicity about opportunities for population-based research for students. The task force also recommended that the Admissions Committee should give preference to individuals with a commitment to and substantial track record of service to the rural and underserved and those with a high likelihood of staying in North Carolina, and track the outcomes of medical education. The task force recommended development of new kinds of linkages between practices in communities at risk in North Carolina; development of a required continuity experience for third- and fourth-year medical students to give them a sense of working in a community over time; and exploration of new degree programs (MD-MBA or MD-MPHA) to develop health services leadership with a special focus on the rural and underserved.

FUTURE PLANS

Once anticipated funding is obtained, the UNC SOM plans to initiate the **Comprehensive Advanced Medical Program of Spanish (CAMPOS)**. The goal of CAMPOS is to graduate more physicians who can provide independent care (i.e., without an interpreter) to the rising numbers of Spanish-speaking patients in this region. CAMPOS participants must come to medical school with some Spanish language skills and an interest in learning medical Spanish. The program plans to accept approximately twenty first-year students. Acceptance will be based on language background, level of interest, a brief interview, and results of a standardized language fluency assessment. CAMPOS students will be placed at ICM sites and in clinical rotations in locations with large numbers of Spanish speaking patients.

SUMMARY

We have responded to research findings that suggest that a strong background in community service, upbringing in a small town or rural area, and disadvantaged background all predict the choice of primary care practice careers. Our Associate Dean for Admissions is a primary care physician. Observation of physician role models who practice in small communities accompanies the study of basic science through Introduction to Clinical Medicine. Course offerings and extracurricular activities encourage and reward study of and contribution to the health of communities. Successful projects can lead to presentations at our school's Student

Research Day and Community Service Day. Service is recognized by election to our Eugene S. Mayer Community Service Honor Society and through Senior Awards and the Allcott Fellowship. Combined degree programs of MD-MPH invite students to gain formal academic training and credentials that will enable them to be leaders of generalist physicians and participate in the creation of new knowledge in this field. Clinical training emphasizes the practice of evidence-based medicine, integration of psychosocial factors in diagnosis and management of patients, and consideration of health promotion and disease prevention in the population. We are improving our efforts in faculty development for community preceptors that will assist both their teaching capabilities and standardize our education process across preceptor sites. Our educational programs supporting primary care training have received funding from extramural agencies such as the Bureau of Health Professions, Department of Health and Human Services, and the Donald W. Reynolds Foundation.

For the past six years, the selection of primary career specialties has trended downward among U.S. seniors. Although we have many programs and initiatives assembled to support students in choosing primary care as a specialty and the UNC SOM faculty continues to be national leaders in primary care education, the number of students entering primary care has fluctuated over the past 10 years from a high of 59.8 percent in 1998 to a low of 45 percent in 2003. We are studying the factors that have contributed to the career choices of our students with the hope that this information can be used to improve our programs to promote interest in generalist careers among students. The SOM remains as committed as ever to fostering programs that will sustain students' interest in applying for primary care residencies and show them the rewards of a generalist practice career in the underserved communities of our state.

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ATTACHMENTS

Figure 1. Internal Medicine 1989 to 2003 US and UNC Student Placements

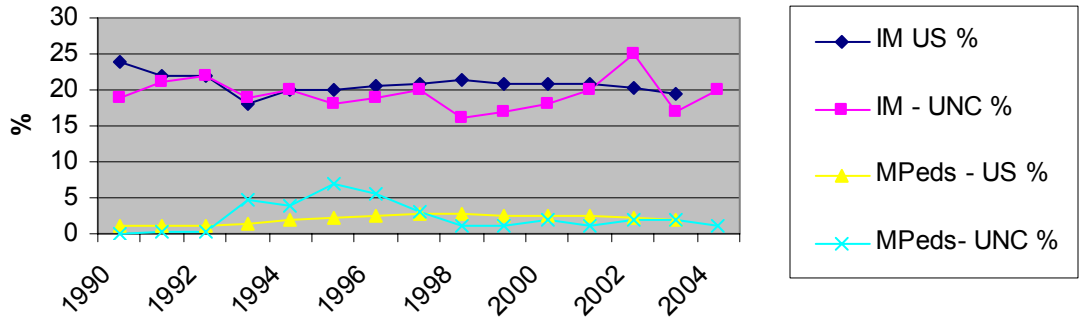


Figure 2. Pediatrics 1989-2003 US and UNC Student Placements

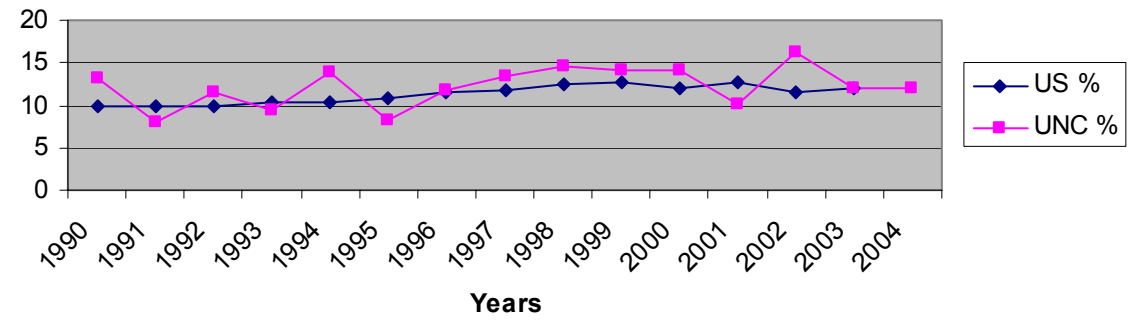
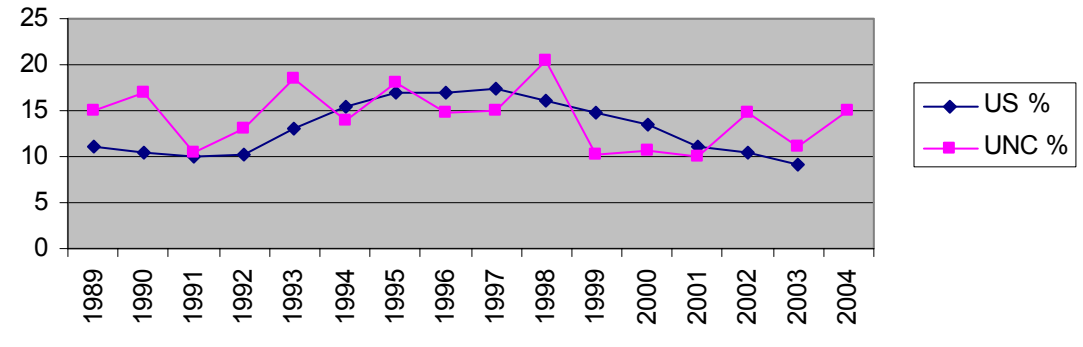


Figure 3. Family Medicine 1989 - 2003 US and UNC Student Placements



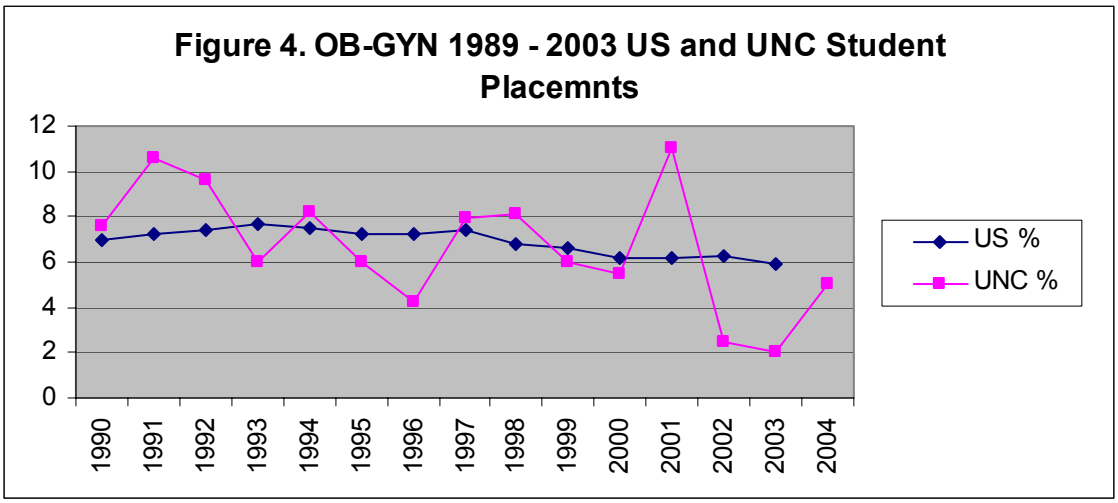


Figure 4. OB-GYN 1989 - 2003 US and UNC Student Placemnts
12
10
8
6
4
2
0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
US %
UNC %

Report to the Board of Governors of the University of North Carolina

Primary Care Medical Education Plan 2004 Update

from
Wake Forest University School of Medicine

March 2004

Respectfully submitted by

William B. Applegate, M.D., M.P.H.
Dean and Senior Vice President for Health Sciences
Wake Forest University School of Medicine

and

K. Patrick Ober, M.D.
Associate Dean for Education

A report in response to General Statute 143-613 as amended by Chapter 507 of the 1995 Session Laws (House Bill 230) of the North Carolina General Assembly

2004 Update: Primary Care Education Plan

Wake Forest University School of Medicine

In 1994, the Wake Forest University School of Medicine submitted an Institutional Plan for Increasing the Number of Generalist Graduates. Initiatives described in the plan included the Primary Care Development Program, the Department of Family Medicine, the partnership with Forsyth County in providing care for the indigent, the administration of the Northwest Area Health Education Center, and the Interdisciplinary Generalist Curriculum. This update will focus on current and planned initiatives, which are directed toward ensuring that our educational programs meet the needs of our students and society.

Programmatic efforts since the last report have been focused in the following areas:

1. **Enrollment**

   Our 1994 report noted that since 1976, when the General Assembly appropriated funds to give North Carolina students an enhanced opportunity to attend medical school, WFUSM has consistently allocated approximately 60% of the positions in each class to North Carolina Students, even though State support has been static since 1976. We had 5,152 applications for this year's entering class, 580 from North Carolina residents. Forty North Carolina residents were selected for the 108-member Class of 2007. Over the past three years, including 2001, WFUSM has enrolled 132 North Carolina residents. See appendix for a fourteen-year trend of applications to WFUSM.

2. **Curriculum**

   A. Community Practice Experience

   The *Prescription for Excellence Curriculum* was introduced in 1998. Students complete a five-week experience with a primary care practitioner as part of their Community Practice Experience course. During this academic year, over 200 students from the classes of 2006 and 2007 were spread throughout North Carolina for their CPE experience. As part of this experience, students complete a community profile and learn about the community resources available to the physicians in the practice to which they are assigned.

   B. Ambulatory Clerkships

   During their third year (Phase III), students complete four-week rotations in Ambulatory Internal Medicine and Family Medicine. The Pediatric rotation includes a four-week ambulatory component, and the Women's Health/Obstetrics/Gynecology rotation includes two weeks of ambulatory experience. Additional primary care experience is available via electives in Phase IV of the curriculum. Multiple community-based practice sites are utilized for student education in these clerkships.

3. **Office of Regional Primary Care Education**

Our 1994 report noted the School's responsibility for administration of the Northwest Area Health Education Center (AHEC). The Northwest AHEC provides financial support for faculty and residents in the Departments of Family and Community Medicine, Internal Medicine, Pediatrics, Obstetrics and Gynecology, and Psychiatry, and for medical students during their community-based primary care rotations. In 1994 AHEC established the Office of Regional Primary Care Education (ORPCE) Program to support medical school initiatives in this area. ORPCE staff have been extremely helpful in facilitating achievement of the school's primary care education goals.

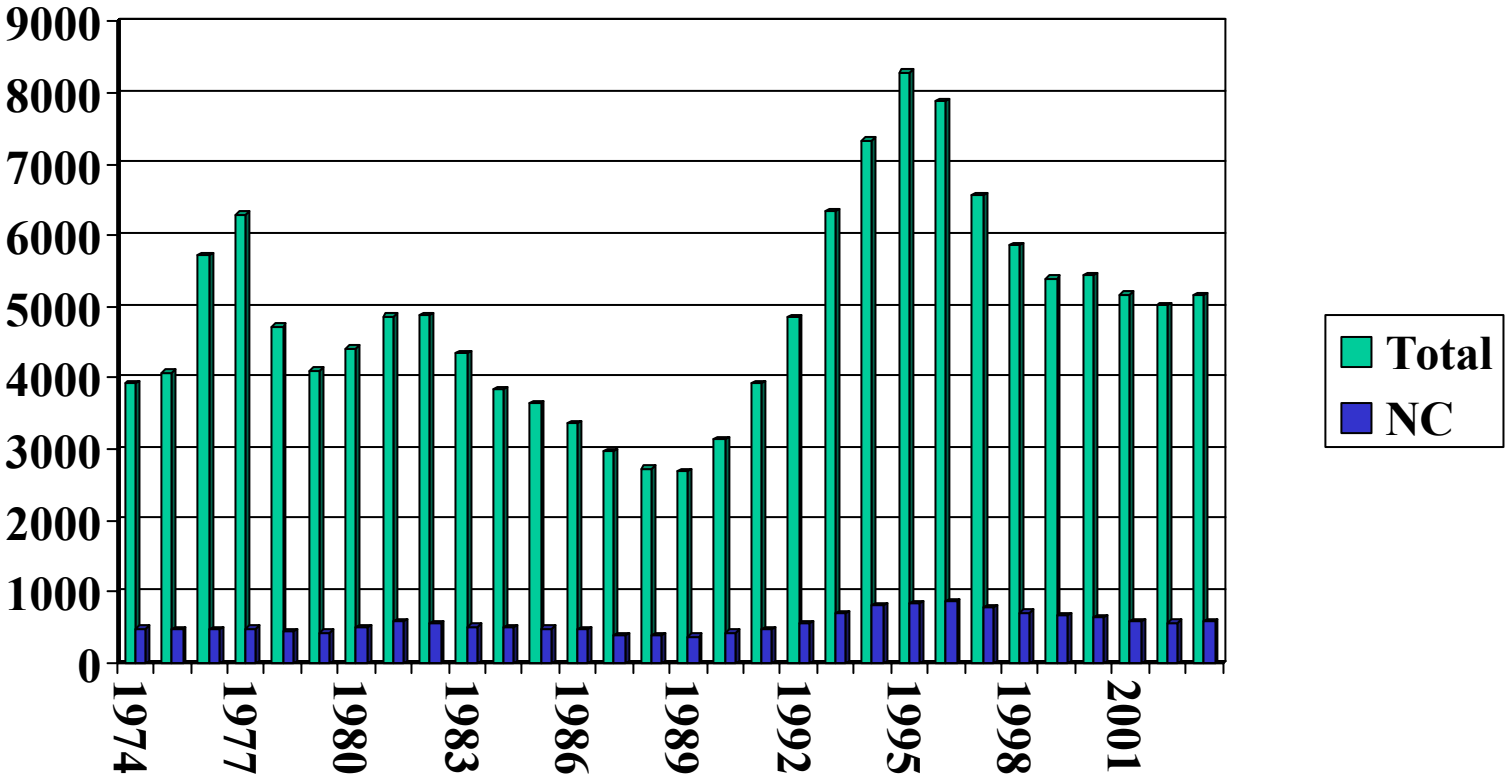
4. **Program Evaluation**

The School regularly tracks the residency selection of its graduating classes. During the past three years an average of 56.3% of the class have selected a first-year residency position in family practice, obstetrics and gynecology, internal medicine and pediatrics (see appendix for 17-year trend).

5. **Summary**

The programs described in this document have been designed to address societal needs with respect to generalist physician education. As noted previously, we have implemented *The Prescription For Excellence Curriculum* which contains a significant emphasis on population and community health. This curriculum was designed to provide graduates with the requisite knowledge, skills and personal characteristics needed by physicians in the first stage of the 21st century. We look forward to continued evolution of our educational program to ensure that we are preparing students to serve the health care needs of our citizens.

APPLICATIONS TO WFUSM



Percent of Wake Forest University School of Medicine Students

Entering Primary Care Specialties *

1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
55%	52%	55%	44%	46%	56%	49%	41%	50%	51%	65%	58%	52%	64%	58%	64%	60%	45%

- Family Practice, Internal Medicine, Obstetrics - Gynecology, Pediatrics, Medicine-Pediatric

Note: the proportion of graduates entering primary care includes one year Internal Medicine residencies expected to lead to sub-specialty training.

AN UPDATE ON PRIMARY CARE MEDICAL EDUCATION PROGRAMS

THE N.C. AREA HEALTH EDUCATION CENTERS (AHEC) PROGRAM

Thomas J. Bacon, Dr.P.H.
Program Director, N.C. AHEC Program
UNC School of Medicine

This report is submitted to the Board Governors of the University of North Carolina
in response to General Statute 143-613 as contained in House Bill 230
passed in the 1995 legislative session.

April 15, 2004

2004 Update: Primary Care Education Plan

The N.C. Area Health Education Centers (AHEC) Program

Introduction

In 1994, the four schools of medicine and the N.C. AHEC Program submitted primary care educational plans designed with the goal of encouraging North Carolina residents to enter primary care disciplines. The plans of the four schools build upon the unique missions and programs of the schools. Although specific activities differ among the schools, they are all implementing initiatives in similar areas in order to increase the percentage of graduates choosing careers in primary care. The biennial updates to the original plans make it clear that the schools build upon their long standing relationships with the N.C. AHEC Program in order to conduct increased medical student and primary care residency training in community settings, with a particular emphasis on rural and underserved areas. The following sections provide an update on the AHEC plan for primary care residency expansion and support of medical schools training.

AHEC Plan for Primary Care Residency Expansion

Background. The General Assembly has given strong support to the training of primary care residents dating back to its appropriation to the AHEC Program in 1974. In 1974, the General Assembly provided funding to the AHEC Program for the expansion of primary care residency programs at the four schools of medicine and at those AHECs having the capacity to develop new primary care residency programs and/or to expand existing programs. Primary care was defined by the General Assembly as family practice, internal medicine, obstetrics-gynecology, and pediatrics. The 1974 legislation provided $15,000 grants to support 300 new primary care residency positions established after 1974. This number was reduced to 281 positions in response to reductions in the state budget sustained by the AHEC Program due to the fiscal crisis that faced the state in 1990-91 and 1991-92. The 1995-96 Expansion Budget grant supported five new residency positions in family practice. The 1997 AHEC Expansion Budget provided support for additional new family medicine positions as called for in the 1994 plan. Budget reductions of the past three years have resulted in the total number of stipends being reduced to 326.

The following chart shows the allocation of the $15,000 residency training grants as of April 2004. It should be noted that the financial amount of these residency grants has not changed since 1974, and now, supports only a small portion of the full cost of the training provided. For those positions funded at the four schools of medicine, there is an obligation to rotate residents to community practice sites, thus broadening the community impact of the funding.

Distribution of AHEC Funding for Primary Care Residents
2003-04

	Family Practice	Internal Medicine	Pediatrics	Medicine/ Pediatrics	OB/GYN	Total
Charlotte AHEC	47.50	5.00	6.00	0.00	2.00	60.50
Coastal AHEC	11.00	12.00	0.00	0.00	6.00	29.00
Duke University	10.75	10.75	8.75	0.00	5.75	36.00
Eastern AHEC	49.25	1.00	1.00	1.00	1.00	53.25
Greensboro AHEC	14.00	7.00	4.00	0.00	0.00	25.00
Mountain AHEC	30.00	0.00	0.00	0.00	3.00	33.00
Southern Regional AHEC	16.00	0.00	0.00	0.00	0.00	16.00
UNC Hospitals	11.00	2.00	1.50	3.50	0.00	18.00
Wake AHEC	2.71	4.88	4.20	0.00	2.71	14.50
Wake Forest University	30.00	6.00	3.50	0.00	1.00	40.50
Total	222.21	48.63	28.95	4.50	21.46	325.75

Total Positions = 325.75

Total Funding = $4,886,250 (325.75 x 15,000)

Current Status: Primary Care Residency Training in North Carolina, 2004. **Two types of expansion of primary care residencies have occurred in North Carolina. The first was the development of new family practice residency programs. The second was the expansion of existing primary care residency programs. The expansion of these residency programs is coupled with an expanded commitment for the training of primary care residents in rural and inner-city areas. In many cases, this included developing rural tracks for second- and third-year family practice residents.**

According to the March, 2004 report of the National Resident Matching Program there were 574 first-year residency positions available in North Carolina, with 323, or 57 percent in the primary care specialties of family practice, internal medicine, pediatrics, and obstetrics/gynecology. These 323 first-year positions in primary care represent an increase of 21 positions since 2000. The following presents the status of primary care residency training in the state as of April 2004.

AHEC Family Practice Residency Programs

Coastal AHEC: New Hanover Regional Medical Center Family Practice Residency Program, developed in conjunction with UNC-Chapel Hill and Coastal AHEC in Wilmington, has a total of twelve residents, four in each of three years. Primary goals are increasing the supply of family practitioners in southeastern North Carolina, as well as improving the retention of primary care physicians. With additional foundation and federal funding, Coastal AHEC has developed special rural experiences for their family practice residents in selected regional communities.

Cabarrus Family Medicine Residency: The Cabarrus Family Medicine Residency Program in Concord, in association with the Duke University Medical Center and Charlotte AHEC, has a total of 24 residents, eight in each of three years. The program graduated its first class of eight residents, in June 1999. Of the first five classes to complete this training at Cabarrus, 81 percent have remained in North Carolina, and 53 percent have gone to small towns or rural areas.

Mountain AHEC: The Mountain AHEC expanded its 24-person family practice residency program by adding a rural track in Hendersonville with two residents in each its three years for a total of six new residency positions. The program graduated its first residents in June 1999. In addition, the OB/GYN program has expanded from three residents per year to four residents per year, for a total of 16 residents.

Charlotte AHEC: The Charlotte AHEC and the Carolinas Medical Center have added a rural track family practice residency in Monroe, which, like the Hendersonville program, has two residents in each of the three years. They have also added an urban track family practice program in Charlotte in collaboration with the Biddle Point Clinic. This program also has two residents in each of the three years.

Greensboro AHEC: The Greensboro AHEC and the Moses H. Cone Memorial Hospital expanded the family practice residency program in the mid-1990's to eight residents in each of the three years for a total of 24 residents. There are now two rural teaching practice sites to which residents may rotate and one inner-city practice where residents may also gain experience.

Southern Regional AHEC: The Southern Regional AHEC in Fayetteville remains at 18 family practice residents. At the current time residents rotate to four rural sites during their residency training. There is currently a new emphasis on practice management and computer skills acquisition.

Wake AHEC: The Wake AHEC, in association with the Department of Family Medicine at the UNC School of Medicine, has developed training opportunities for family practice residents from UNC at Wake Medical Center. These rotations give residents exposure to caring for the underserved urban population served by the medical center.

Primary Care Residency Training at the University Medical Centers

Wake Forest University School of Medicine: The Wake Forest University School of Medicine and the Baptist Hospital have maintained primary care residency training capacity at the same level as in 2002. The family practice residency program has a total of 30 residency positions. In pediatrics (36 residents) and internal medicine (60 residents), a strong emphasis is placed on preparing generalists for community practice.

Duke University Medical Center: The Duke University School of Medicine continues to have five primary care residency tracks: general internal medicine, general pediatrics, a combined medicine/pediatrics residency, family medicine, and obstetrics/gynecology. No changes have occurred in primary care residencies.

ECU School of Medicine: The ECU School of Medicine, in conjunction with three area hospitals, expanded the family practice residency program in the mid-1990s from 36 positions to 54 through new rural track residency programs in Ahoskie, Williamston, and Clinton. In 1999 ECU decided to close the three rural programs due to changes in federal funding and difficulty in recruiting residents to these remote sites. It has now returned to a 36 resident program, but with a special rural track within the program for four to six residents in each of the three years of the curriculum. General internal medicine has increased from 10 to 12 positions in each year. As a result, residency-training positions in primary care fields now total 146.

UNC School of Medicine: The UNC School of Medicine and the UNC Hospitals has expanded their family practice residency program in the mid-1990's from 18 to 24 residents. No further expansion is planned at this time, but the department continues to develop community-based experiences for residents to enhance their preparation for community practice.

The Department of Obstetrics/Gynecology has increased its residency program to six residents for each of the four years for a total of 24. The Department of Pediatrics has completed a phased expansion of its residency program to a total of 48 residents. Similarly, the medicine/pediatrics residency has completed a modest expansion, which has resulted in a four-year program with a total of 24 residents.

AHEC Support of Community-Based Primary Care Student Training

In 1993, 1995, and 1997, the N. C. AHEC Rural Primary Care Initiative received funding from the N. C. General Assembly to support rural primary care, community-based education. As a result, an Office of Regional Primary Care Education (ORPCE) was created at each of the nine AHECs to facilitate the teaching of primary care students in community settings.

Since 1993, the state's nine AHEC ORPCE offices have supported a dramatic growth in primary care, community-based education. Currently, the AHEC ORPCEs facilitate the community-based teaching of all medical, nurse practitioner, physician assistant, and certified nurse midwifery students in North Carolina, as well as the PharmD students from UNC-Chapel Hill. While the ORPCEs supported 693 student months of training in 1993-94, the total number of student months supported in 2002-2003 was over 3,900. These primary care experiences occur in approximately 1,300 community sites and with more than 2,000 individual preceptors across the state. These community-based student rotations provide an enriched experience in primary care with an early and continuing exposure to community practitioner role models, opportunities for practice in rural and underserved areas, and real world health care.

Facilitating quality primary care, community-based education for all health science students is the responsibility of each AHEC and it depends upon effective partnerships between the health science schools, AHECs (through their Offices of Regional Primary Care Education), and practicing clinicians throughout the state. The statewide AHEC system continues to provide the following elements of support:

For Preceptors

- Preceptor development activities
- Coordinated protocols for reimbursing eligible preceptor sites.
- Advocacy of preceptor concerns to schools
- Strengthened library and information services (including the AHEC Digital Library)

For Students

- Coordinated student housing
- Assistance with student logistics
- Facilitation of quality educational experiences consistent with curricular goals
- Internet connections and access to library and information services

For Health Science Schools

- Identification and recruitment of preceptor sites
- Coordination of placement and teaching of students in community-based sites
- Assistance with the evaluation of community-based education.

Summary

This 2004 update on primary care programs indicates that the residency programs at the four schools of medicine and the AHEC system have significantly increased the number of primary care residents. North Carolina has now exceeded its goal of having approximately 50 percent of all residency positions in primary care by the year 2000. Currently, 57 percent of all first-year positions are in one of the four primary care specialties. This growth will significantly increase the number of primary care physicians trained in North Carolina, and increase the number of positions available to graduates of North Carolina's medical schools who show an interest in entering primary care specialties.

The foregoing program-by-program review of the primary care residency programs in North Carolina demonstrates that family medicine has experienced a substantial expansion of the numbers of residents through the development of rural and urban residencies. Each of the five AHEC-based family practice residencies and each of the four university-based family practice residency programs expanded their number of residents. In addition, two new residency programs have been developed at the Coastal AHEC in Wilmington and in Concord. There has also been a modest expansion of residency training in internal medicine, pediatrics, and obstetrics/gynecology. This expansion includes primary care tracks and/or community-based training for the residents.

Of great importance to the state's efforts to retain residency graduates for practice in underserved communities is encouraging the expansion of residency training at each site and in each primary care field through the development of rural and inner-city training sites for residents from each of the programs. It can be assumed that the aforementioned efforts to expand primary care residency positions and to increase the rotations of residents to rural and inner-city areas will substantially enhance the retention of generalist physicians in the state while also increasing the likelihood that they will settle in underserved areas. In addition, since the rural and inner-city rotation of residents will strengthen the physician practices and health centers acting as teaching sites, it can be expected that the physician preceptors working in these practices will suffer less professional isolation and be more likely to remain in their communities.