FUNDING OF THE SCHOOLS OF MEDICINE AT UNC SYSTEM CONSTITUENT INSTITUTIONS

October 28, 2014

As required by Session Law 2014-100, Section 11.20

UNIVERSITY OF NORTH CAROLINA

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UNIVERSITY OF NORTH CAROLINA

I. INTRODUCTION

In the 2014 budget (S.L. 2014-100, Section 11.20), the North Carolina General Assembly required:

> *"The University of North Carolina System, working with the appropriate constituent institutions and health systems, shall report to the Joint Legislative Oversight Committee on Health and Human Services and the Joint Legislative Education Oversight Committee on how the medical schools are funded. The report shall include a detailed explanation of the sources of all income within both a current and historical context, noting any changes in funding sources and amounts over time. The report shall also include a detailed explanation of operating expenses so that they may be compared to income. The report required by this section is due by October 1, 2014, and shall be based on the most recent audited fiscal year practicable."*

North Carolina is fortunate to have two public medical schools, the Brody School of Medicine at East Carolina University and the School of Medicine at the University of North Carolina at Chapel Hill. The following report and appendices provide current and historical information about how these two medical schools are funded including detailed information and explanations about the sources of income and changes to those revenue streams over time. In addition to these requirements, this report includes information about the service and impact, both in terms of health and economics, which these two institutions have on the state of North Carolina and its residents.

However, any review of medical schools and their financial foundations cannot be conducted in a vacuum and without context. An evolving healthcare environment will impact these two institutions differently. Despite both being part of University of North Carolina system, the Brody School of Medicine at ECU and the School of Medicine at UNC Chapel Hill are distinct institutions of varying sizes and structures, with different histories and missions. While these distinctions result in very different funding models for these institutions, they are similar in that they both rely on multiple funding sources and all of them are experiencing pressure.

II. FINANCIAL SPREADSHEETS

The following spreadsheets show ten years of revenue and expenditure trends for both the Brody School of Medicine and the School of Medicine at UNC Chapel Hill. These figures are reported on a cash basis and are based on data reported annually as part of the American Association of Medical Colleges Annual Financial Questionnaire (AAMC AFQ), as required as part of accreditation for schools of medicine. Appendix I is a Glossary that explains the terms included in the spreadsheets to help ensure consistent interpretation of the data and proactively address questions.

East Carolina University - Brody School of Medicine

SCHOOL OF MEDICINE - FUNDING BY FISCAL YEAR

	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14 (UNAUDITED)
REVENUES:										
Tuition & Fees:										
MD Tuittion & Fees	1,405,541	1,525,270	1,731,328	1,941,636	1,985,093	2,502,745	2,942,159	3,306,295	3,990,174	4,751,216
MD FEES	40,693	39,005	42,380	50,994	221,449	221,091	226,083	154,739	194,057	247,458
Receipt Supported - incl TEACCH	-	-	-	-	-	-	-	-	-	-
Total Tuition and Fees	**1,446,233**	**1,564,275**	**1,773,708**	**1,992,630**	**2,206,542**	**2,723,836**	**3,168,242**	**3,461,034**	**4,184,231**	**4,998,674**
State Appropriated Funds:										
SOM	44,220,697	43,818,342	43,413,836	46,814,238	44,164,182	45,442,367	45,518,372	41,386,952	43,909,329	45,585,634
Indigent Care	-	-	2,000,000	2,500,000	-	2,000,000	2,000,000	2,000,000	2,000,000	1,952,000
Public Health (all state)	-	-	-	-	896,832	1,025,572	1,367,415	1,414,213	1,547,416	2,052,925
TEACCH	-	-	-	-	-	-	-	-	-	-
Total State Appropriated Funds	**42,774,464**	**42,254,067**	**43,640,128**	**47,321,608**	**42,854,472**	**45,744,103**	**45,717,545**	**41,340,131**	**43,272,514**	**44,591,885**
Parent University Support	5,967,782	5,976,630	7,728,504	7,500,645	8,751,064	11,485,479	12,706,399	11,159,802	9,804,322	10,201,296
Total State Funding	**48,742,246**	**48,230,697**	**51,368,632**	**54,822,253**	**51,605,536**	**57,229,582**	**58,423,944**	**52,499,933**	**53,076,836**	**54,793,181**
Direct Cost Research Funding:										
Federal - NIH	2,920,570	2,880,419	2,903,574	2,985,609	4,025,200	4,584,430	4,644,504	4,053,286	3,708,579	3,019,602
Other Federal	3,129,158	1,847,752	1,915,629	1,783,446	2,702,717	2,306,560	2,475,190	2,741,374	2,872,552	3,315,188
State	5,723,124	4,642,700	4,734,359	5,010,508	5,292,086	5,045,222	5,331,802	4,860,343	5,408,028	5,286,533
Not For Profit/For Profit Sponsors	3,183,544	4,406,263	5,035,446	7,884,580	7,841,794	8,243,150	8,897,284	6,486,822	6,385,459	6,406,869
Total Direct Cost	**14,956,396**	**13,777,134**	**14,589,008**	**17,664,143**	**19,861,797**	**20,179,362**	**21,348,780**	**18,141,825**	**18,374,618**	**18,028,192**
Facilities & Administrative Cost:										
Allocated to SOM	202,156	678,077	608,991	700,106	839,612	850,492	930,488	942,491	865,746	788,479
Retained by Parent	1,819,421	1,582,179	1,420,979	1,633,580	1,959,096	1,984,481	2,171,139	2,199,146	2,020,075	1,839,784
Total Facilities and Administrative	**2,021,577**	**2,260,256**	**2,029,969**	**2,333,686**	**2,798,708**	**2,834,974**	**3,101,627**	**3,141,637**	**2,885,821**	**2,628,263**
Practice Plan / Other Medical School	**98,431,451**	**96,834,525**	**104,326,078**	**101,675,079**	**115,679,124**	**123,961,496**	**152,939,682**	**133,193,079**	**126,653,154**	**133,710,229**
Hospitals:										
University Owned	-	-	-	-	-	-	-	-	-	-
Other Affiliated Hospitals	18,574,880	20,803,913	25,594,271	23,796,455	23,321,319	25,335,179	27,181,541	49,396,759	49,759,452	49,286,109
Total Hospital Revenues	**18,574,880**	**20,803,913**	**25,594,271**	**23,796,455**	**23,321,319**	**25,335,179**	**27,181,541**	**49,396,759**	**49,759,452**	**49,286,109**
Gifts	1,734,678	2,309,535	3,800,157	731,946	3,382,627	3,627,410	2,819,726	1,256,831	1,110,238	1,386,470
Endowment Income	17,420	51,872	17,180	40	117,409	248	85,213	91,033	183,633	127,082
Other Revenues	3,089,987	3,298,013	3,768,643	1,592,712	1,449,204	1,787,136	1,916,640	2,211,697	2,104,383	2,277,660
University Cancer Research Fund	-	-	-	-	-	-	-	-	-	-
TOTAL REVENUES	**189,014,868**	**189,130,220**	**207,267,647**	**204,608,944**	**220,422,266**	**237,679,222**	**270,985,395**	**263,393,828**	**258,332,366**	**267,235,860**
Expenditures & Net Transfers										
Faculty Salaries (EPA Teach & Non-Teach)	61,302,748	64,603,463	68,447,029	68,516,429	73,579,997	77,982,021	83,695,958	88,815,662	95,034,758	100,987,028
Student Salaries (EPA Student)	1,667,379	1,303,902	1,266,096	1,145,022	1,103,870	1,226,873	1,469,718	1,539,586	1,478,665	1,418,218
Staff Salaries (SPA)	42,026,249	42,340,124	45,115,945	48,076,584	52,282,474	53,044,332	53,364,561	53,422,919	53,413,910	56,598,883
Benefits	22,849,766	25,916,791	26,785,251	28,360,676	30,353,179	32,712,781	35,735,470	38,048,976	40,446,237	43,603,064
Other Personnel	7,120,720	10,697,503	11,555,023	8,292,129	6,644,435	10,823,719	10,196,123	11,142,866	11,732,492	13,640,080
Supplies	13,245,976	14,662,886	16,914,371	19,150,422	22,861,586	25,348,608	27,565,377	15,956,656	16,381,256	21,939,004
Current Services (Telephones, Computers, Etc.)	17,446,964	21,898,192	20,383,195	17,497,468	20,697,229	21,561,455	22,350,916	21,348,653	18,518,459	20,063,556
Rent, Equipment & Maintenance	12,901,737	9,494,501	9,095,977	9,842,236	9,319,023	9,922,093	9,944,298	8,995,583	9,538,103	11,029,706
Capitalized Equipment	4,355,614	3,544,992	4,194,021	4,117,798	3,444,628	4,280,257	3,876,310	1,892,087	2,168,627	2,586,000
Educational Stucent Awards	250	55,650	205,291	226,057	257,915	209,506	188,777	124,127	87,373	53,924
Sub-contracted Research	-	-	-	-	-	-	-	-	-	-
Net Transfers	176,216	4,073,085	1,991,913	393,078	4,358,156	4,600,122	6,354,311	2,421,745	3,408,018	4,593,601
Medicare Education Receipts Cash Transfer-In IAW NCGS 116-36.6 (Session Laws 2005-276, s. 9.26(a)(2a))				(19,918,116)						
TOTAL EXPENDITURES & TRANSFERS	**183,093,619**	**198,591,089**	**205,954,112**	**185,699,783**	**224,902,492**	**241,711,767**	**254,741,819**	**243,708,860**	**252,207,898**	**276,513,064**
NET REVENUES OVER EXPENDITURES	**5,921,249**	**(9,460,869)**	**1,313,535**	**18,909,161**	**(4,480,226)**	**(4,032,545)**	**16,243,576**	**19,684,968**	**6,124,468**	**(9,277,204)**

UNC School of Medicine
Statement of Changes in Net Assets

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Tuition and Fees	9,871,362	11,763,907	11,646,823	12,655,936	13,711,425	15,862,360	18,088,421	19,673,257	21,949,098	24,206,708
Total State Appropriated Funds	64,776,848	66,469,543	74,710,141	78,397,036	81,314,430	74,912,271	63,947,034	39,918,260	62,308,573	47,397,733
Total Permanent State Funding	74,648,210	78,233,450	86,356,964	91,052,972	95,025,855	90,774,631	82,035,455	59,591,517	84,257,671	71,604,441
General Funds (Tuition, Fees & Appropriated funds)										
SOM	63,399,269	65,881,435	73,044,781	76,939,394	79,811,584	76,170,941	69,514,369	46,129,744	70,522,150	57,866,788
Allied Health	4,704,845	4,756,560	5,009,805	5,658,295	6,264,723	6,293,364	6,093,181	6,128,745	6,716,795	6,920,268
TEACCH	5,138,050	5,651,181	6,246,483	6,776,259	7,270,523	6,900,779	6,145,258	5,230,472	5,362,081	5,215,175
Receipt Supported - incl TEACCH	1,406,046	1,944,274	2,055,894	1,679,025	1,679,025	1,409,547	1,656,645	2,102,555	1,656,645	1,602,210
Total Permanent State Funding	74,648,210	78,233,450	86,356,964	91,052,972	95,025,855	90,774,631	83,409,452	59,591,517	84,257,671	71,604,440
One - Time Funding from Parent Univ	1,678,387	2,765,532	1,577,509	1,768,395	(2,371,280)	5,833,443	16,209,859	17,267,295	19,192,731	22,486,659
Total State Funding	76,326,597	80,998,982	87,934,473	92,821,367	92,654,575	96,608,075	99,619,311	76,858,812	103,450,402	94,091,099
University Cancer Research Fund	0	0	0	8,691,360	44,985,542	48,992,931	55,725,986	47,840,819	49,600,682	42,089,447
Facilities and Adminstrative Cost										
Indirect Cost Recovered from Research	60,149,866	64,533,134	64,676,969	66,338,537	70,124,774	81,344,085	89,758,970	86,404,695	87,255,043	89,144,541
Indirect Cost Retained by Parent	(37,225,000)	(41,621,100)	(37,306,908)	(36,562,248)	(33,069,948)	(45,124,227)	(50,710,119)	(61,084,639)	(70,629,711)	(59,071,570)
Allocated from Parent to SOM	22,924,866	22,912,034	27,370,061	29,776,289	37,054,826	36,219,857	39,048,852	25,320,056	16,625,332	30,072,971
Direct Cost Research Funding										
Federal - NIH	144,870,754	148,055,782	149,689,089	155,684,894	171,656,006	190,840,944	205,057,088	195,998,652	197,385,667	266,952,522
Other Federal	25,309,970	29,697,142	33,446,839	29,952,807	31,316,843	34,554,825	40,413,834	43,910,529	50,588,286	60,417,825
State	8,213,000	7,820,183	7,921,418	8,135,258	8,149,422	8,241,512	7,743,805	7,148,153	6,280,537	7,024,829
Not For Profit/For Profit Sponsors	33,743,864	38,961,031	35,744,195	47,526,995	45,095,392	48,222,019	46,770,370	47,151,449	49,316,552	63,142,179
Total Direct Cost	212,137,588	224,534,138	226,801,542	241,299,953	256,217,664	281,859,300	299,985,097	294,208,784	303,571,042	397,537,354
Practice Plans/Other Medical Services	210,182,807	227,296,384	211,458,491	249,542,982	261,893,190	248,442,551	279,010,518	329,577,392	340,617,290	320,344,167
Hospitals:										
University Owned	51,653,189	70,712,809	80,628,893	83,695,439	93,147,446	107,439,457	115,606,392	125,283,268	140,069,468	138,960,144
Other Affiliated Hospitals	0	8,448,858	27,600,961	20,731,511	28,468,969	14,595,101	27,488,992	23,391,086	23,077,535	26,704,615
Total Hospital Revenues	51,653,189	79,161,667	108,229,854	104,426,950	121,616,415	122,034,558	143,095,385	148,674,354	163,147,003	165,664,759
Gifts	17,412,319	19,955,200	18,447,328	21,963,058	22,734,514	18,412,071	28,657,969	27,421,772	18,829,124	11,822,942
Endowment Income	0	0	2,266,789	0	0	0	0	3,041,467	4,090,556	6,376,587
Service contracts	9,795,244	9,661,925	1,197,091	0	0	0	4,780,789	7,377,257	8,970,917	9,511,251
Other Revenues	8,401,448	18,947,536	15,786,781	23,225,622	25,029,909	45,936,265	28,967,241	30,634,409	22,236,916	24,174,796
TOTAL REVENUES	**608,834,057**	**683,467,865**	**699,492,410**	**771,747,581**	**862,186,634**	**898,505,607**	**978,891,148**	**990,955,122**	**1,031,139,265**	**1,101,685,373**
Expenditures										
Faculty Salaries (EPA)	194,605,524	210,252,018	232,545,763	245,626,615	267,874,180	281,243,062	307,776,696	319,254,376	332,423,466	351,153,369
Student Salaries (EPA Student)	27,016,685	27,418,523	28,385,651	29,602,241	34,115,129	36,935,790	34,943,783	35,979,450	35,956,329	34,918,417
Staff Salaries (SPA)	67,713,590	68,715,023	73,681,861	77,549,354	82,630,263	86,806,152	87,669,613	89,018,226	85,671,848	86,888,621
Benefits	77,977,755	83,006,002	86,085,625	84,960,752	94,928,087	98,814,876	110,204,011	118,579,901	122,855,682	129,683,690
Other Personnel	56,296,522	64,350,595	69,536,658	75,580,214	74,881,774	76,721,642	101,544,814	106,514,826	105,005,600	118,602,067
Supplies	49,556,376	50,875,156	56,440,679	49,185,862	67,688,701	68,553,329	72,267,306	71,508,023	72,910,293	70,588,451
Current Services (Telephones, Computers, Etc.)	39,138,405	40,306,925	42,931,604	46,072,151	56,956,039	58,589,628	70,135,066	68,105,813	63,320,808	73,925,750
Rent, Equipment & Maintenance	9,822,830	9,521,472	10,408,482	11,326,492	12,292,701	12,847,835	15,480,239	12,936,969	16,826,641	18,592,785
Capitalized Equipment	5,107,054	7,462,098	10,357,356	12,228,105	23,962,460	21,630,697	24,920,776	14,038,050	14,051,548	11,529,291
Educational Student Awards	15,254,317	16,523,804	16,844,209	17,110,277	17,792,486	19,398,436	21,012,668	21,131,629	21,903,856	23,080,588
Sub-contracted Research	26,491,179	28,211,376	21,005,522	32,566,234	36,180,959	36,017,074	40,624,532	41,322,036	54,665,304	54,839,855
Expense Transfers	29,861,355	66,965,332	54,674,990	69,356,846	73,323,588	92,793,256	86,991,475	55,428,599	103,522,766	147,538,593
TOTAL EXPENDITURES & TRANSFERS	**598,841,592**	**673,608,323**	**702,898,399**	**751,165,145**	**842,626,365**	**890,351,776**	**973,570,979**	**953,817,899**	**1,029,114,140**	**1,121,341,476**
NET REVENUES OVER EXPENDITURES	**9,992,465**	**9,859,542**	**(3,405,989)**	**20,582,436**	**19,560,269**	**8,153,831**	**5,320,169**	**37,137,223**	**2,025,125**	**(19,656,103)**

University Cash Basis
Based on AAMC Annual Financial Questionnaire (AAMC AFQ)
F and A allocation to UNC SOM does not include capital improvement projects fully or partially funded by UNC-CH

UNIVERSITY OF NORTH CAROLINA

III. SUMMARY NARRATIVE

Hospital Relationships

An important financial difference, which is not well understood, between the Brody School of Medicine at ECU and the School of Medicine at UNC Chapel Hill, is the relationship those institutions have with their respective teaching hospitals. At its birth, the medical school at ECU was created without also creating a hospital within the university. The school has had an affiliation with then Pitt County Memorial Hospital, now doing business as Vidant Medical Center, since 1974. Currently, the Brody School of Medicine at ECU has an affiliation agreement with Vidant Medical Center, which is the flagship hospital of Vidant Health, a private non-profit corporation. Vidant Medical Center is the 900-bed teaching hospital that serves as the primary teaching site for the medical school. Although this arrangement has preserved the independence and importance of each institution over time, the lack of common ownership of the school and hospital has prohibited the unrestricted flow of mission support funds from the hospital to the school, which is the norm at many top performing medical schools across the state and nation.

The School of Medicine at UNC Chapel Hill, on the other hand, is inherently linked with the UNC Health Care System as the vehicle for faculty to see and treat patients. The School of Medicine at UNC Chapel Hill was expanded to a four-year program in 1952 in concert with the opening of the state-owned and operated NC Memorial Hospital. Today, through legislation enacted in 1998, the UNC SOM is closely linked with the UNC Health Care System. As the anchor of this partnership, under the umbrella of UNC Health Care, UNC Hospitals (an 840 licensed bed, acute care facility providing emergency and outpatient services) is the UNC SOM's primary partner. In total, UNC Health Care includes one academic medical center, six community hospitals, one critical access hospital, the faculty practice (UNC Faculty Physicians), and the community physician practice (UNC Physicians Network).

During recent periods of state reductions, increased transfers of clinical funds from UNC Health Care System have shielded the School of Medicine at UNC Chapel Hill from the direct impact of funding cuts. A similar transfer of funds from hospital to medical school is not legally possible for the Brody School of Medicine. However, the current trend of large funds flowing from UNC Health Care to the UNC SOM cannot continue to grow indefinitely. UNC Health Care funds its own infrastructure, issues its own debt, and maintains its bond ratings when debt is issued for capital projects. Multi-billion dollar businesses need substantial working capital to run. When compared to other health care systems in the state, reserves at UNC Hospitals, Rex Healthcare, and other System entities are relatively low. Rating agencies, as well as prudent business sense, dictate that hospitals maintain adequate amount of days of cash on hand to support operations. Recently, UNC Hospitals has begun to go below these thresholds. Continued violation of these thresholds will result in rating downgrades and increased cost of capital.

Size and Specialties

The School of Medicine at UNC Chapel Hill is one of the nation's largest medical teaching programs with 2,200 students consisting of medical students, residents, PhD students and allied health students. The School enrolls roughly 900 masters and doctoral students, and in partnership with UNC Hospitals, the UNC SOM provides Graduate Medical Education; sponsoring 72 ACGME accredited residency and fellowship programs including Internal Medicine, Surgery, Pediatrics, Family Medicine, Psychiatry and Obstetrics and Gynecology.

The programs enroll 583 residents and 149 fellows annually. Residency programs are largely funded through the clinical activities of the resident physicians themselves.

The Brody School of Medicine (BSOM) offers eight graduate programs and two certificate programs in six departments, totaling over 400 students and over 375 resident physicians. Six of these programs are Ph.D. programs in the basic medical sciences and two are Master's level programs. Enrollment in the Ph.D. programs is approximately 70-80 per year over the past five years. The MPH program has an approximate enrollment of 90 over the same time period, while the Master's of Biomedical Sciences program is newer and has an enrollment of 14.

The varying size and range of specialties of each institution have direct impacts on their bottom lines. Reimbursement from insurance and other sources is often less for outpatient care than that for services provided within a hospital or for a highly specialized procedure. At the Brody School of Medicine, there is a heavy emphasis on outpatient primary care and limited specialty care, in contrast with the UNC School of Medicine where there is a wide range of specialties in addition to primary care, notwithstanding the differences in patient volume, acuity, and ability to pay making the practice plan at UNC better positioned to benefit from the higher reimbursing specialty care due to its alignment with the hospital where this care is delivered.

General Fund Support (Tuition/fees and Appropriations)

As with any public institution of higher education in North Carolina, two important revenue streams are tuition and fees as well as appropriations. Both the Brody School of Medicine at ECU and the School of Medicine at UNC Chapel Hill provide affordable medical education to North Carolinians as they are among the least expensive medical schools in the country. Tuition and fees for in-state students for the 2015 academic year at the UNC School of Medicine total $20,800. At the Brody School of Medicine, combined tuition and fees for in-state students for the current year are $20,492.

It's worth noting that a relatively low level of indebtedness for medical school graduates as a result of their education is an important factor in their choosing to practice primary care and practice in rural and underserved communities.

Both institutions have seen budget reductions as a result of appropriations. While state appropriations directed to the Brody School of Medicine increased from $42.77 million to $44.59 million between FY 2005-2006 to FY 2013-2014, the School is serving more students and the funding increases have been driven in part by legislated compensation increases in some years and budget adjustments related to increased fringe benefit costs. This increase is net of successive permanent reductions in funding in seven of the last 10 fiscal years. The total permanent state budget cut for this 10-year period is almost $11.1 million. The cut represents the loss of just over 25 faculty positions exempt from the Human Resources Act (EHRA), almost seven Non-Faculty EHRA positions, more than 42 support staff positions Subject to the Human Resources Act (SHRA), and operating budget reductions.

Appropriations to the UNC School of Medicine have declined from a high of $188 million in FY 2009, to $114 million in FY2014. As recently as 2010, the UNC School of Medicine and UNC Hospitals received annual direct appropriations of $42 million. The rationale for these directly appropriated funds was to help support the cost of graduate medical education, and to support a portion of the large amount of uninsured, underinsured and governmental sponsored (Medicaid, Medicare, and Tricare) patient care being delivered as the state's acute care, safety net hospital. These direct appropriations have been eliminated, yet with UNC Health Care, the UNC

SOM provides more than $300 million in uncompensated care each year. Additional legislatively imposed reductions, including reduced funding to the University Cancer Research Fund, brought the level of state support down by a recurring $74 million over 5 years. Similarly, the Brody School of Medicine also plays a unique role as the dominant safety net health care provider in Eastern North Carolina by providing approximately $10 million in indigent care for residents of that region. Starting in 2007 the General Assembly began appropriating $2 million to offset these unreimbursed costs, though that appropriation has been reduced slightly as state budgets have tightened.

Research

While both the School of Medicine at UNC Chapel Hill and the Brody School of Medicine at ECU bring in a substantial share of research funding for their parent institutions, the size and type of the funding varies, as does its impact on the finances of the schools and their affiliated institutions. In FY 2014, the School of Medicine at UNC Chapel Hill won nearly $400 million in competitive research grants and the Brody School of Medicine at ECU won $22.2 million.

Extramural research funding includes support for direct research expenses and indirect costs (facilities and administrative costs. Contracts and grants are awarded to provide for the research and discovery that have specific deliverables as required by the funding entity. These sources of revenue support the research enterprise by providing salary, laboratory and student support. Funding also provides provisions for facilities and administrative (F&A) (overhead) support. Indirect costs are used to promote research program growth including new faculty. In 2014, the UNC School of Medicine faculty generated $89 million in indirect cost reimbursements. The Brody School of Medicine brings in a much lower amount of facilities and administrative costs, which one would expect based on its smaller research funding. However, Brody also tends to receive a lower than average F&A rate. This is predominantly due to the fact that Brody's portfolio of sponsored activity is heavily skewed to service contracts, which typically carry little or no F&A.

Private Gifts

Private gifts and endowment income are a relatively small portion of both of these institutions' revenue. In FY 2014, the Brody School of Medicine brought in just over $1.5 million and the UNC School of Medicine reported approximately $18.2 million. These sources of revenue are often unstable and vary quite a bit from year to year. Dips in private gifts and endowment income typically occur during periods of economic turmoil, which is exactly when that funding would be most beneficial.

The success of these two schools of medicine is critical to the health and economic well being of North Carolina. In their own reports, each institution details the crucial role they play in providing health care to North Carolinians as well as the long-term impact of their graduates, often in fields and communities of critical need (see appendices).

UNIVERSITY OF NORTH CAROLINA

APPENDIX I: GLOSSARY OF REVENUE AND EXPENDITURES

This glossary provides context to the revenue and expenditure data reported in the financial spreadsheets. Before discussing various revenue and expenditure categories, one important discussion point is the overall format of the revenues and expenditures report. The format generally follows the presentation requirements to the Association of American Medical Colleges (AAMC) and the Liaison Committee on Medical Education (LCME). The LCME is the accrediting agency for all U.S. and Canadian medical schools granting the M.D. degree.

The data in the enclosed report reflect actual results for each fiscal year (in contrast to budgeted activity).

REVENUES

Tuition & Fees

Tuition and fees paid by students attending either the Brody School of Medicine or the UNC Chapel Hill School of Medicine. These include medical students, graduate students and other professional students.

State Appropriated Funds

State appropriated funds support students at both medical schools. These funds primarily support medical students and PhD students. Each school has its own unique student population. For example, the Brody School of Medicine houses a Public Health program within the School, while at UNC, Public Health is separate School. Additionally, the UNC SOM includes the Department of Allied Health, and the TEACCH program, a statewide autism program with multiple locations across the state.

The reported Total State Appropriated Funds is a calculated number: the State Appropriated Funds are reduced by the amount of reported Tuition and Fees. Using the totals for the Brody School of Medicine in FY 2014 as an example, the sum of School of Medicine (SOM) Appropriated Funds, Indigent Care Appropriated Funds, and Public Health Appropriated Funds totals $49,590,559. The Tuition and Fee revenues for FY 14 were $4,998,674, which when subtracted from the $49,590,559, results in Total State Appropriated Funds of $44,591,885 as reported on the enclosed schedule. (Note: This calculation is consistent with AAMC and LCME directions on the reporting of state support.)

Parent University Support

Both Schools receive support from expenditures of funds originating from the state and/or the allocation of operating funds to the medical school from the parent university. This includes the medical schools calculated or estimated pro-rata share of central support cost borne by the parent university (eg. physical plant maintenance, libraries, legal services, student and administrative services). The parent university allocates non-recurring allocations of one-time funds for one-time needs of the medical school.

As an example, for the Brody School of Medicine, there are three main categories of this type of funding:

- Compensation paid by ECU (parent) for teaching services provided by Brody School of Medicine faculty to non-medical students in other schools/colleges (e.g., nursing, allied health, and physics students).
- Funding for the operations and maintenance of Brody School of Medicine facilities. The annual appropriation for the utilities, skilled trades crafts employees, housekeeping employees, etc., is made to ECU, and then ECU allocates the budget necessary for the operations and maintenance of the medical school facilities.
- Non-recurring allocations of one-time funds the university sometimes makes to the medical school.

Direct Cost Research Funding

Direct costs (e.g., labor costs of the principal investigators, related research support staff, and non-labor costs such as research supplies, equipment purchase and maintenance, animal model costs, etc.) paid by granting agencies in support of research conducted within both Schools of Medicine. (Note: Direct grant revenues are reported as direct grant expenditures.)

Federal NIH Research Funding

Research revenues received from the National Institutes of Health (NIH).

Other Federal

Research revenues received from other federal agencies (e.g., Department of Defense, Health Resources and Services Administration (HRSA), National Institute of Science, etc.).

State

Research and select sponsored program contracts.

Not For Profit/For-Profit Sponsors

Research funded by non-governmental agencies, such as the American Cancer Society or the American Heart Association. Also reported in this category are clinical trials sponsored by non-governmental agencies.

Facilities and Administrative Cost

F&A (indirect) costs are charged to grants and contract accounts as direct costs are spent based on negotiated rate agreements (eg F&A costs are charged as a percent of direct costs spent). As F&A costs are charged to grants and contracts, the funds are usually transferred to and accumulated in separate accounts to pay indirect expenses. Examples of such costs include research facilities, renovations, utilities, administrative salaries, and general office expenses. Since it would be difficult or impossible to allocate such costs to each individual project, federal cost principles allow universities to negotiate an F&A rate with their cognizant federal agency. By charging this rate to each project, universities are able to recover the costs associated with these vital functions. The funds are withheld by the parent and transferred to accounts outside control of the medical school, and then split between the parent and the school.

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Practice Plan

Clinical revenues generated by the faculty members at both Schools; ECU Physicians at the Brody School of Medicine, and UNC Faculty Physicians at the UNC School of Medicine. These revenues are payments for professional physician services provided to patients.

Hospitals (University Owned)

The UNC School of Medicine and UNC Hospitals are political subdivisions of the State of North Carolina, reporting to UNC General Administration. UNC Hospitals is the primary teaching hospital for the UNC SOM. UNC Hospitals has a closed medical staff, thus UNC SOM faculty are the only physicians with medical privileges. UNC Hospitals purchases medical direction, limited clinical services, teaching services for graduate medical education, and provides strategic support to the UNC SOM. The UNC SOM and UNC Hospitals were permanently linked in 1999, when the UNC Health Care System was created. Today, the UNC SOM and UNC Health Care share a single leader.

Hospitals (Other Affiliated Hospitals)

Revenues generated primarily by Vidant Medical Center, the independent private, not-for-profit local hospital with whom the Brody School of Medicine has had a long-standing affiliation agreement. In many academic medical centers, the university owns the primary teaching hospital used by the medical school. In contrast, Brody has no ownership of the primary teaching hospital. Among the four allopathic medical schools (Brody, UNC Chapel Hill, Wake Forest, and Duke) in North Carolina, Brody is the only allopathic medical school not owning its primary teaching hospital. The hospital revenues stated herein reflect payments by Vidant for services rendered, including physician leadership (medical directors), the interpretation of some diagnostic testing, and for the education of resident physicians (employed by the hospital). This last category of revenue related to resident physician education is also known as graduate medical education; the large majority of the education of resident physicians is delivered by the Schools of Medicine faculty members. While the UNC SOM is primarily affiliated with UNC Hospitals, it is also affiliated with hospitals across the State. Carolinas HealthSystem, Mission Health, and WakeMed are some of the largest partners. These external partners provide support in exchange for contracted services provided by the SOM.

Gifts

Charitable donations made by individuals or organizations intended to provide a benefit to the Schools of Medicine.

Endowment Income

The revenues associated with the *expendable* portions of endowments (i.e., not from an endowment corpus).

EXPENDITURES AND NET TRANSFERS

Labor

The salaries and related fringe benefits for employees of both Schools of Medicine (paid from state, research, and clinical funds.) These labor costs are inclusive of the school's faculty (both physician and non-physician) and support staff needed for the operation of the schools.

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Operating

Expenditures such as the purchase of supplies, maintenance service agreements for educational, research, and clinical equipment, facilities leases, and malpractice insurance premiums. Also recorded in this section are the net transfers in/out of the medical schools.

Capital Equipment

Expenditures related to the purchase of equipment used to meet the educational, research, and clinical missions of the medical schools.

Medicare Education Receipts Cash Transfer-In

In the 2005 Session of the North Carolina General Assembly, General Statute 116-36.6 was amended. The amended statute appropriated to the Brody School of Medicine cash reserves, related to graduate medical education (GME) receipts, which, prior to July 1, 2005, had been recorded in special funds on deposit with the State Treasurer. The amended statute authorized these cash reserves to be used by the "Brody School of Medicine...for purposes consistent with its stated mission." The total amount of funds in these special funds prior to July 1, 2005 was $19,918,116. In its general ledger, the university recorded this appropriation as a "Transfer-In" to the medical school in fiscal year 2008. Because this transaction was specifically authorized by statute, this transfer is reported as a separate item for this specific fiscal year. Since all other transfers are recorded in the Expenditures and Net Transfers (in the Operating Expenditure line) portion of the report, this specific transfer-in is recorded as a negative number consistent with the recording of all other transfers-in. All other transfers for 2008 are recorded in the Operating Expenditure line, consistent with reporting for other years.

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Appendix II: School of Medicine at the University of North Carolina at Chapel Hill

UNC SCHOOL OF MEDICINE

REPORT ON FUNDING OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL SCHOOL OF MEDICINE

October 1, 2014

Session Law 2014-100 Section 11.20

UNIVERSITY OF NORTH CAROLINA

Introduction

The University of North Carolina at Chapel Hill School of Medicine (SOM) was established in 1879. For the first half of the 20th century, it was a two-year medical education program requiring students to transfer elsewhere. The program was expanded to a four-year program in 1952 in concert with the opening of the state-owned and operated NC Memorial Hospital. Today, through legislation enacted in 1998, the SOM is closely linked with the UNC Health Care System. At the anchor of this partnership, under the umbrella of UNC Health Care, UNC Hospitals (840 licensed bed, acute care facility providing emergency and outpatient services) is the SOM's primary partner.

This partnership has created one of the leading public academic medical centers in the country. Overall, UNC Health Care includes one academic medical center, six community hospitals, one critical access hospital, the faculty practice (UNC Faculty Physicians) and the community physician practice (UNC Physicians Network). Collectively, the SOM and UNC Health Care's entities employ 30,000 individuals and generate more than $5 billion in economic benefit to the state each year, while serving patients from all 100 of the state's counties. Through this multi-faceted partnership, the SOM trains future physicians, conducts groundbreaking research and provides outstanding health care services to the citizens of North Carolina.

The following report highlights the partnerships that are essential for moving the SOM forward and provides insights into of the increasingly challenging fiscal environment faced by the SOM. Per Session Law 2014-100, Section 11.20, this report provides an overview and a fiscal analysis of the SOM spanning the last 10 years. This report outlines sources and amounts of revenue, as well as how funds are allocated and spent. In addition, the report gives an overview of the three-part mission of the SOM and the UNC Health Care System.

Leading, Teaching and Caring

The UNC School of Medicine's story is one of service to North Carolina, and our commitment to lead, to teach and to care. We lead the evolution of health care; conducting research and developing tools, techniques and approaches that allow us to discover new cures and better treatments for diseases. We teach the next generation of physicians, scientists and medical professionals, many of which will work in rural areas of our state. We care for the people of North Carolina; serving the needs of our patients, providing greater access to health care services and providing the highest quality of care, regardless of the patient's ability to pay.

When taken in isolation, each of these individual missions is difficult to execute successfully. When linked together, and through the partnership with UNC Health Care, all three missions are executed exceedingly well.

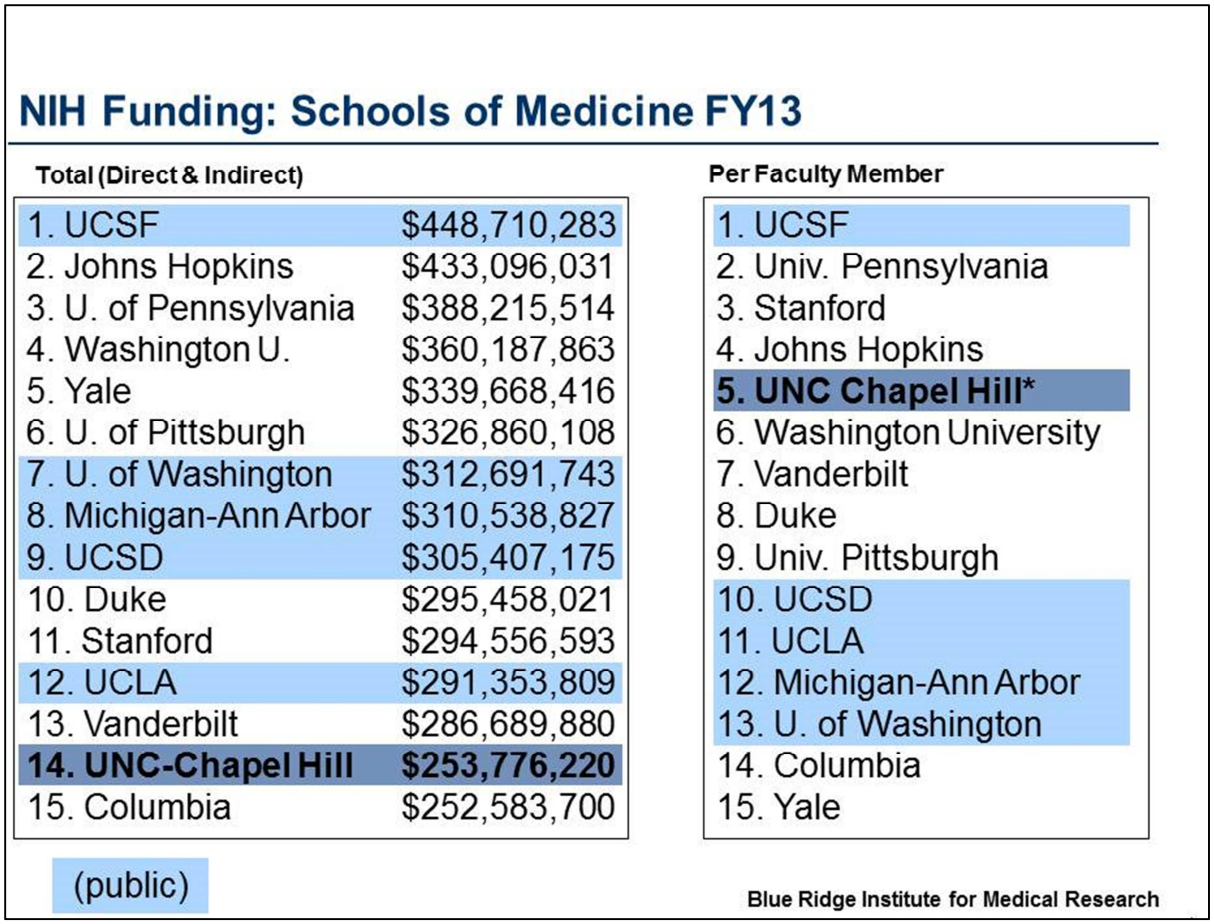
Leading: Conducting groundbreaking research

The SOM's research capacity and portfolio is widely regarded. UNC-Chapel Hill is ranked 47th in research capacity among the world's top 400 universities.[1] The SOM leads these efforts on the campus by generating more than half of the total research revenues received by the university. Also, the research enterprise has and continues to be recognized through the numerous accolades received by our faculty, including Dr. Oliver Smithies, who received the 2007 Nobel Prize. In addition, entire programs are recognized as groundbreaking and relevant. One prime example is UNC's HIV prevention research, which was named 2011 Scientific Breakthrough of the Year" by *Science Magazine*. Many of these triumphs and recognitions are

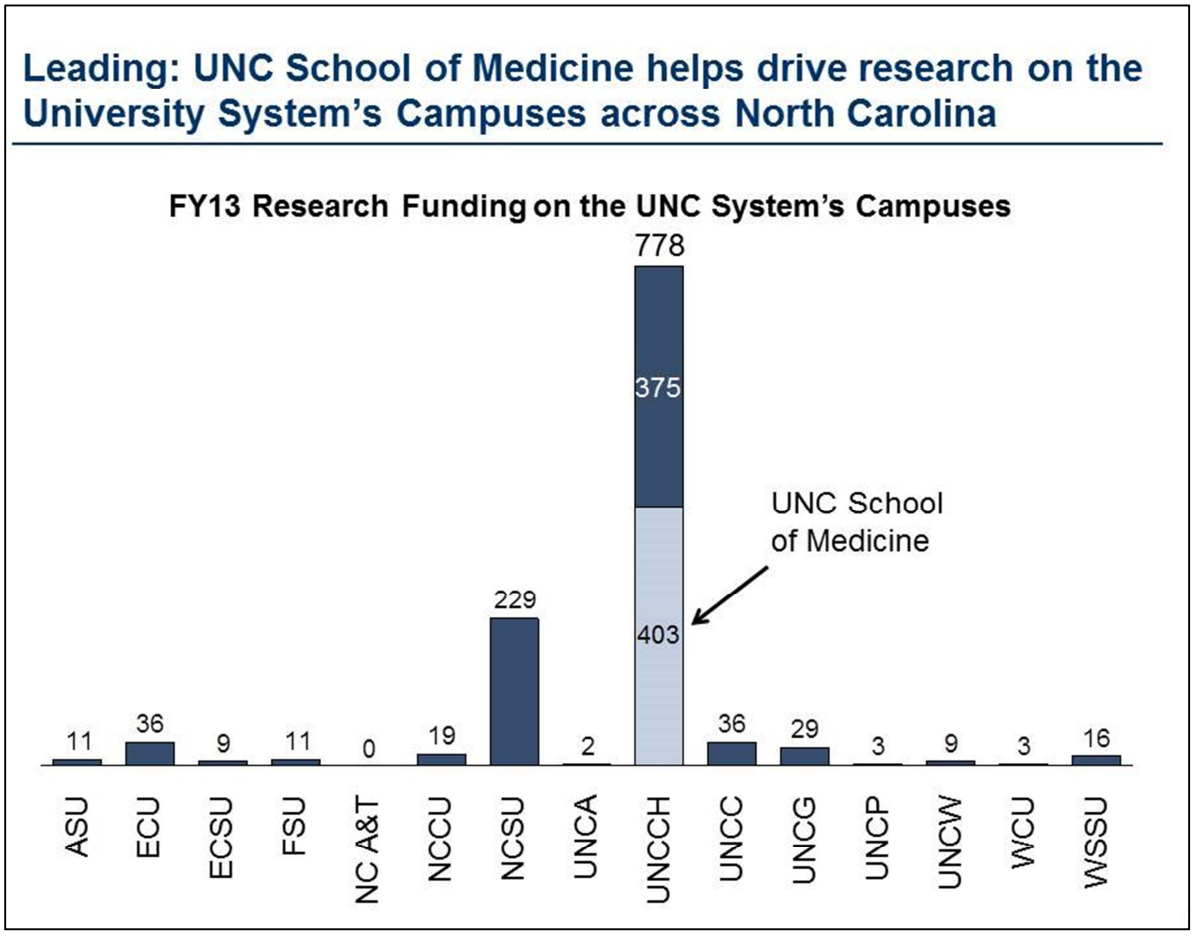
[1] London Times Higher Education, 2013-14

enabled by investments made to the SOM's research enterprise.

Over the past 10 years, research dollars for the SOM have increased from $275 million to nearly $400 million annually. As a result of the hard work performed by the faculty, overall, UNC-Chapel Hill is a top ten federally-funded institution through grants and contracts made by the National Institutes of Health (NIH) and National Science Foundation. These are the primary sources of revenue for the SOM research enterprise.



Extramural research funding includes support for direct research expenses and indirect costs (facilities and administrative costs). Contracts and grants are awarded to provide for the research and discovery that have specific deliverables as required by the funding entity. These sources of revenue support the research enterprise by providing salary, laboratory and student support. Funding also provides provisions for facilities and administrative (overhead) support. Indirect costs are used to promote research program growth including new faculty. In 2014, the SOM faculty generated $89 million in indirect cost reimbursements; the SOM's share of these funds totaled $30 million.



In addition to Federal support for research, the SOM receives approximately $42 million a year by way of the state-appropriated University Cancer Research Fund (UCRF). The UCRF has been instrumental in leveraging investment by the Federal Government. UCRF has allowed the School to attract and retain more than 140 of the best cancer researchers and physicians in the country. Since inception, the state has invested $298 million. Each dollar invested has generated $4 dollars in return. This investment by the state of North Carolina is one of a kind that not only has a large economic return on the ongoing investments by the state, but it also sets the stage for curing, preventing and treating cancer. The UCRF is embedded in all three missions of the SOM.

State and Federal support is key to the research successes realized. However, these funds do not cover the full cost of the enterprise. By definition, federal research funds do not cover 100 percent of our investigator's salaries. Also, investigator salaries are capped by federal rules. Some of our highest regarded researchers make more than the cap. Departments rely on additional sources, in the way of health system funds, state funds, and industry-sponsored support to bridge the gap.

Although SOM faculty continue to excel in the competition for federal NIH funding, this trend is not expected to continue. Peer institutions have seen substantial decreases from NIH. Total funding for NIH has not kept pace with inflation and investigators are increasingly competing for shrinking research dollars. In addition, annual state funding for the UCRF has decreased from a high total of $50 million to the current $42 million.

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Teaching: Training future physicians, scientists and health professionals

The SOM is one of the nation's largest medical teaching programs. Our 2,200 students consist of medical students, residents, PhD students and allied health students.

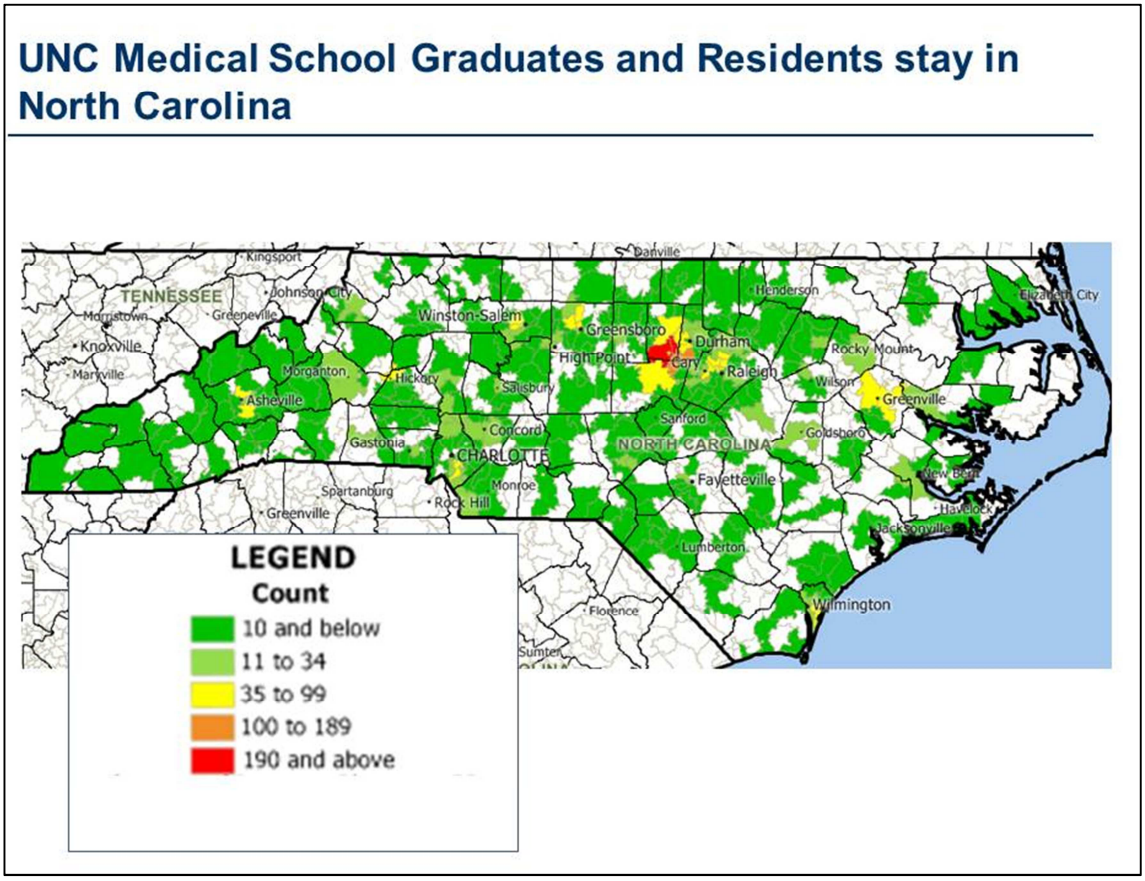
The School receives more than 5,000 applications for the 180 medical student slots each year. This results in 720 high-performing medical students across four classes, and makes the medical school the largest in the state and among the largest medical schools in the country. Eighty-six percent of students are North Carolina residents. More than 3,200 practicing medical doctors in North Carolina are graduates of the School, or are graduates of the School's residency programs. Approximately 44 percent of each graduating class choose to remain in North Carolina to practice. In addition, the SOM is in the top decile nationally among medical schools for graduates practicing in rural areas.

The SOM provides affordable medical education to North Carolinians as it consistently ranks among the fifteen least expensive medical schools in the country. Tuition and fees for in-state students for the 2015 academic year total $20,800. As was the case from FY13-FY15, we expect additional school-based tuition increases (SBTIs) in FY16 and FY17. These SBTIs are in addition to campus-based tuition increases. Despite these recent tuition increases, the SOM provides substantial value to its students. It is estimated that the annual cost to teach medical students is between $60,000 and $100,000[2] per student. While these costs are partially offset by state appropriations, subsidization from the research and clinical enterprises are necessary to provide a comprehensive medical education.

In partnership with UNC Hospitals, the SOM provides Graduate Medical Education; sponsoring 72 ACGME accredited residency and fellowship programs including Internal Medicine, Surgery, Pediatrics, Family Medicine, Psychiatry and Obstetrics and Gynecology. The programs enroll 583 residents and 149 fellows annually. Admission into these programs is highly selective and the programs draw applicants from a national pool. Many graduates of these programs remain in North Carolina to practice and to teach medical students.

Residency programs are largely funded through the clinical activities of the resident physicians themselves. Residents are employed by UNC Hospitals, or in some cases by the SOM. Under the oversight of SOM faculty, residents staff operational departments of UNC Hospitals, provide call coverage for SOM faculty, and see patients in a myriad of patient care settings. While salaries and benefits are paid directly to the resident physicians, UNC Health Care provides additional funds to support the teaching and administration of residency programs.

[2] The cost of teaching medical students varies widely per student. The variation depends on the student curriculum choices, like MD-MPH or MD-PhD dual degree programs.



The SOM has one of the largest medical school-based basic science programs in the country. As highlighted earlier, the SOM is a national leader in research, consistently ranking among the top public research institutions in the country in research activity, federal funding and student success. Biological and biomedical laboratories at UNC perform cutting-edge research in a broad array of fields such as developmental biology, nanomedicine, genomics, cancer biology, virology and many more. The School enrolls roughly 900 masters and doctoral students, and employs more than 350 faculty members organized into 14 degree-granting PhD programs. The School attracts faculty and students with a wide diversity of backgrounds hailing from all over the world.

The SOM trains scientists who work to solve our world's biggest health problems. SOM PhD and masters students often are funded by the same research studies that attracted them to the SOM. In exchange for working under a principal scientist, students receive stipends and reduced tuition. In some cases, they also teach basic science courses at the SOM and in other science departments at the University. SOM basic science programs differentiate themselves from others in the country by the close proximity to UNC's research enterprise, the training resources available through NIH, and early-stage grant opportunities for student-led research.

In total, the SOM has approximately 1,700 full and part-time faculty. To support the faculty, there are an additional 2,000 plus staff. Average faculty salaries are generally at the 25th percentile when compared to benchmark medians. No different from the research enterprise, state funds and tuition revenues alone do not cover the total costs of this mission. State funds cover less than 20 percent of faculty and staff salaries.

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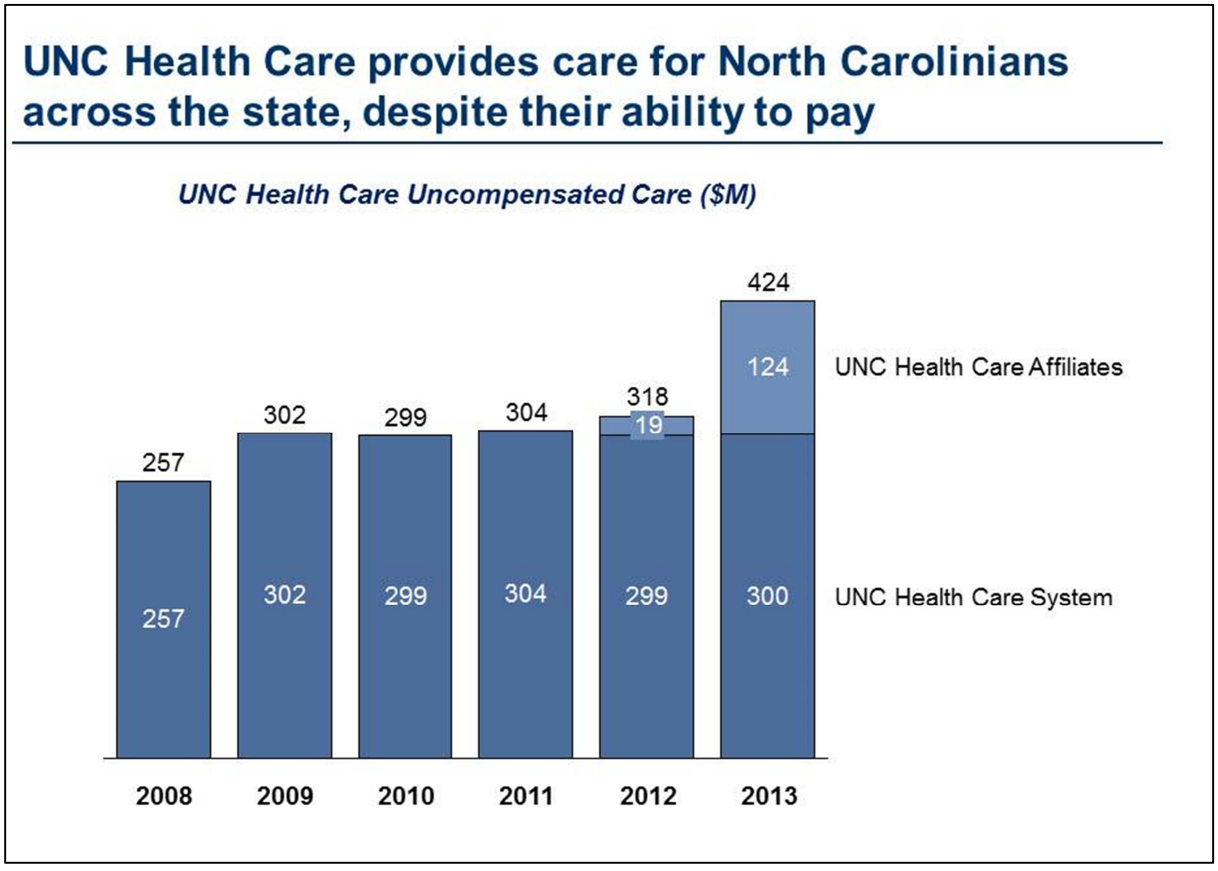
Caring: Providing the best care to all North Carolinians

In addition to serving our state, the SOM is nationally recognized for providing outstanding care. *US News & World Report* ranks the SOM No. 2 in Primary Care, No. 2 in Family Medicine and No. 6 in Rural Medicine,[3] among other accolades.

The SOM is inherently linked with the UNC Health Care System, as the vehicle for faculty to see and treat patients. In total, UNC Health Care includes one academic medical center, six community hospitals, one critical access hospital, the faculty practice (UNC Faculty Physicians), and the community physician practice (UNC Physicians Network). UNC Hospitals is among the top 3 percent of hospital facilities nationally,[4] as analyzed by *US News & World Report*. Rex Hospital and High Point Regional Hospital are also recognized by US News. [5,6]

As the state's health care system, UNC Health Care serves patients across all 100 of our state's counties, including underserved and rural populations. Since 2009, UNC Health Care has provided about $300 million of uncompensated care annually. Accounting for uncompensated care at our recently affiliated hospitals, the number is $424 million annually.



[3] http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-medical-schools/university-of-north-carolina-chapel-hill-04083

[4] http://health.usnews.com/best-hospitals/area/nc/university-of-north-carolina-hospitals-6360260

[5] http://health.usnews.com/best-hospitals/area/nc/rex-healthcare-6361210

[6] http://health.usnews.com/best-hospitals/area/nc/high-point-regional-hospital-6360780

The School's impact reaches far beyond the classroom and into the communities where we live. The School initially developed, and currently administers, the Area Health Education Centers (AHEC) program. This partnership between academic medical centers and underserved communities in North Carolina provides high-quality, easily accessible education for local health professionals.

The AHEC program significantly improves access to superior medical care through the effective distribution of physicians and other health professionals, both geographically and by specialty. In partnership with AHEC, the education and recruitment of health care professionals to serve North Carolina's underserved rural communities is central to the mission of the School of Medicine.

Challenges for the future

The primary success factors for the SOM are the many intertwined partnerships across the health care system. These partnerships enable mission-critical collaborations, as well as the sharing of revenue streams which support the three-part mission. As highlighted, there is not a single revenue stream supporting each portion of the three-part mission in isolation. It is the combination of matrixed streams supporting multiple parts of the mission that has allowed the SOM to flourish over the past decade.

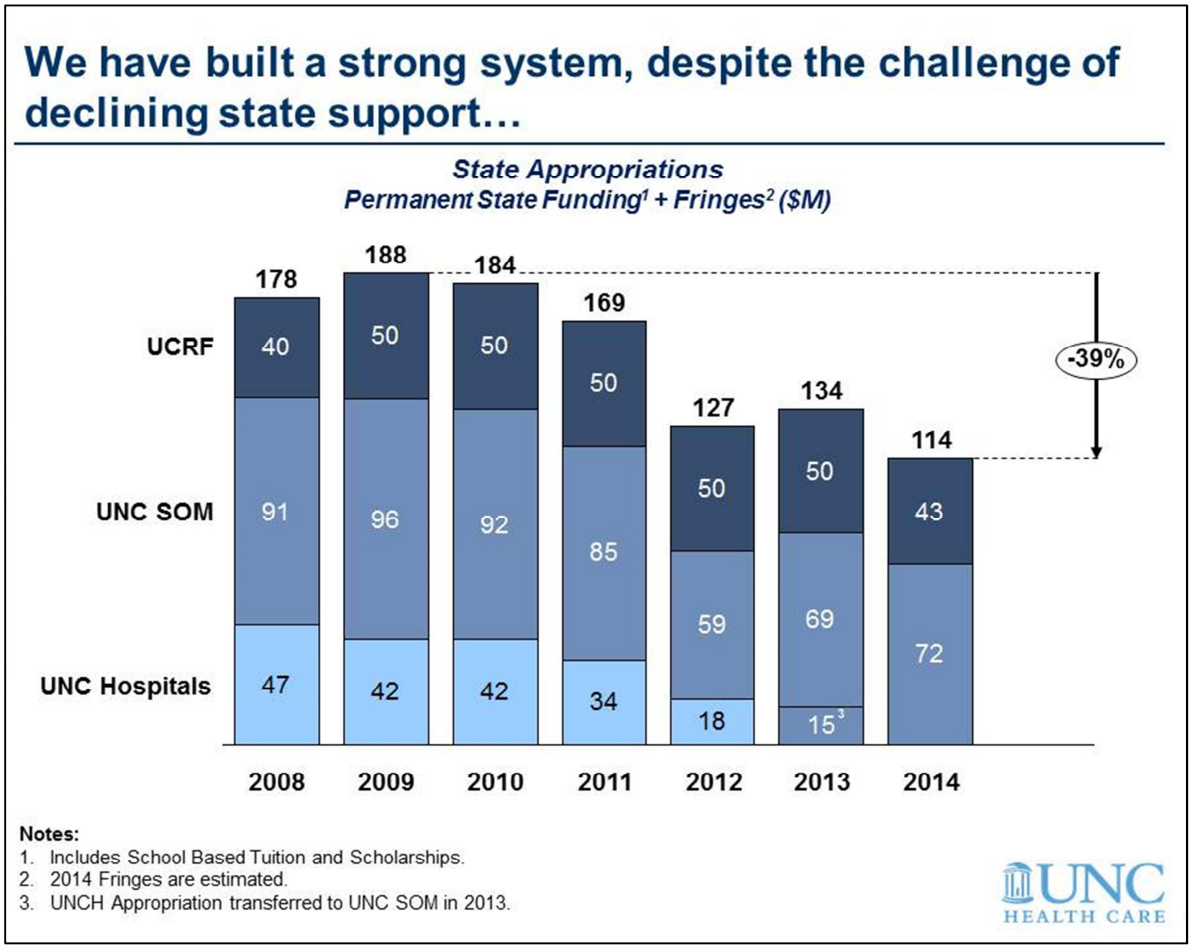
Pressure on all revenue streams is expected to intensify over the next decade. These fiscal pressures could stagnate SOM growth, and prevent the SOM from maintaining its status as a preeminent medical school providing outstanding training for future North Carolina physicians.

Threat of Declining Funds for Research

Federal research dollars are anticipated to decline, at least in post-inflation terms. Over the last three years, SOM faculty have been very successful obtaining federal grants. The SOM is one of the only top medical schools to increase both the amount of federal research dollars received and the share of total federal funds available. In a time of declining available federal funds, the SOM's gain has been at the detriment of other institutions. Many other institutions have seen their research revenues decline each of the past five years, as evidenced in annual rankings. The SOM's research enterprise has served as a major catalyst for the state. SOM faculty will continue to compete well for these funds, but will have to also look toward more industry sponsored research as well as philanthropic giving.

Threat of Declining Funds for Education

State support to the SOM has been cut roughly 40 percent over the last five years. As recently as 2010, the SOM and UNC Hospitals received annual direct appropriations of $42 million. The rationale for the appropriation for these funds was to help support the cost of graduate medical education, and to support a portion of the large amount of uninsured, underinsured and governmental sponsored (Medicaid, Medicare, and Tricare) patient care being delivered as the state's acute care, safety-net hospital. These direct appropriations have been eliminated. Additional legislative imposed reductions, including reduced funding of UCRF, brought the level of state support down by a recurring $74 million over 5 years.



But the SOM has managed to grow and maintain its reputation despite these reductions. The medical school class size has increased and regional campuses were established in Charlotte and Asheville. At the same time, the School has instituted severe cuts to staff and programs to balance the effect of the reductions. The School has also shelved plans to increase the medical school class size further, from 180 to 230 students, due to the uncertainty of future decreases in state support.

Threat of Declining Funds for Providing Care

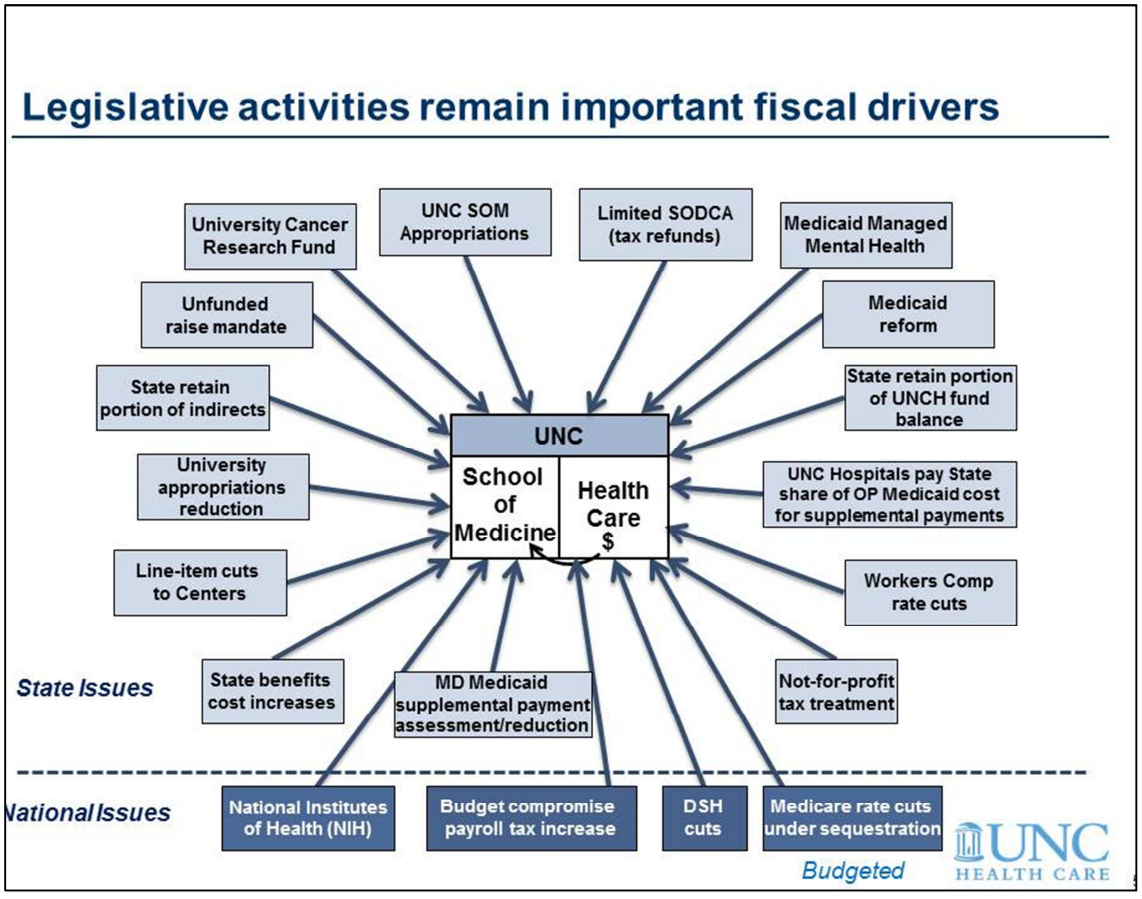
Patient care for the uninsured and the Medicaid population continues to grow. SOM faculty see a disproportionate share of these populations as compared to other physicians at other large health care systems around the state. As the state's safety-net hospital, it is our unique responsibility. However, as noted above, state appropriated support to the SOM is expected to continue to decline over the next few years. Support from Medicaid supplemental payment programs for faculty physicians and hospitals will be scrutinized, and might be reduced or eliminated if the state converts the Medicaid program into a managed care program. These programs augment services provided by the faculty and enable patient care for those that can least afford the cost of care.

During this period of state reductions, increased transfers of clinical funds from UNC Health Care System have shielded the SOM from the direct impact of funding cuts. Unfortunately, the trend cannot continue to grow indefinitely. UNC Health Care funds its own infrastructure, issues

its own debt, and maintains its bond ratings when debt is issued for capital projects. Multi-billion dollar businesses need substantial working capital to run. When compared to other health care systems in the state, reserves at UNC Hospitals, Rex Healthcare, and other System entities are relatively low. Rating agencies, as well as prudent business sense, dictate that hospitals maintain adequate amount of days of cash on hand to support operations. Recently, UNC Hospitals has begun to go below these thresholds. Continued violation of these thresholds will result in rating downgrades and increased cost of capital.

Increased cost and decreased support are known threats. The SOM and UNC Health Care are also combating unknown threats. While it is known that the Affordable Care Act will impact the SOM and UNC Health Care, the magnitude and timing remains unknown. In simple terms, it is expected that clinical revenues will continue to decline as the health care industry continues down the path of dramatic changes.

The pressures associated with these threats will continue. As shown in the accompanying graphic, there are many more impacting the SOM and UNC Health Care. In response, the SOM and the Health Care System must continue to operate more efficiently in carrying out each segment of the three-part mission.



Efforts are constant and ongoing to find operational efficiencies while still enabling the SOM to excel. Currently, there is a national physician shortage of greater than 60,000. The need for physicians will soon grow exponentially as baby boomer physicians retire. By 2020, one-third of today's practicing physicians will retire. The fast growing population of North Carolina also

UNIVERSITY OF NORTH CAROLINA

necessitates the need to educate and train more physicians locally. North Carolina is expected to move from being the 10th most populous state to the 6th most populous state by 2030. The SOM is ready to grow and continue to enhance its stature from its current position. However, it will require additional investment.

Our goal is to be the nation's leading public academic medical center. To do this, we need to attract the best students, we need to attract and retain the best faculty, we need to maintain and enhance our aging physical plant and we need to retain enough resources to provide care for our society's worst medical conditions and provide quality care to all North Carolinians. The trends outlined above show how difficult this will be going forward.

As legislated by Session Law 2014-100, the following spreadsheet shows ten years of revenue and expenditure trends. These figures are reported on a cash basis and are based on data reported annually as part of the American Association of Medical Colleges Annual Financial Questionnaire (AAMC AFQ), as required as part of the SOM's accreditation. Fiscal year 2014 is unaudited but is considered reliable.

The research and clinical enterprises have driven the SOM's growth. Creation of the UCRF in 2007, the opening of the NC Cancer Hospital in 2009, the awarding of the Clinical and Translational Science Award (CTSA) grant by the NIH in 2009, and other state and federal research funding are the primary drivers of SOM growth. Overall growth of the research enterprise and the opening of the NC Cancer Hospital have enabled the SOM's ability to compete for additional extramural revenue.

Over the 10 year period, revenues increased by 6.8 percent annually. Extraordinary revenue growth occurred between 2009 and 2011 with the opening of the NC Cancer Hospital, the UCRF's first full year of operation, and growth related to NIH and American Recovery and Reinvestment Act of 2009 (ARRA) research grants. Over the same period, expenses increased by 7.2 percent annually.

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Appendix III: Brody School of Medicine at East Carolina University

East Carolina University
Brody School of Medicine

Mission Reports

More than four decades after the establishment of The Brody School of Medicine at East Carolina University, the enduring impact to North Carolina - particularly to rural eastern North Carolina - far exceeds the promises made by the General Assembly and a generation of bipartisan state leaders to the people of North Carolina. The improbable success of the School is unique in the United States and a testament to the clarity of vision and the depth of the commitment to serve the people of our state by thousands of students, faculty and staff for more than a generation.

The following report will outline Brody's extraordinary impacts in: education, research, health care, the economy, workforce development and society in eastern North Carolina, statewide, nationally and internationally.

I. Education

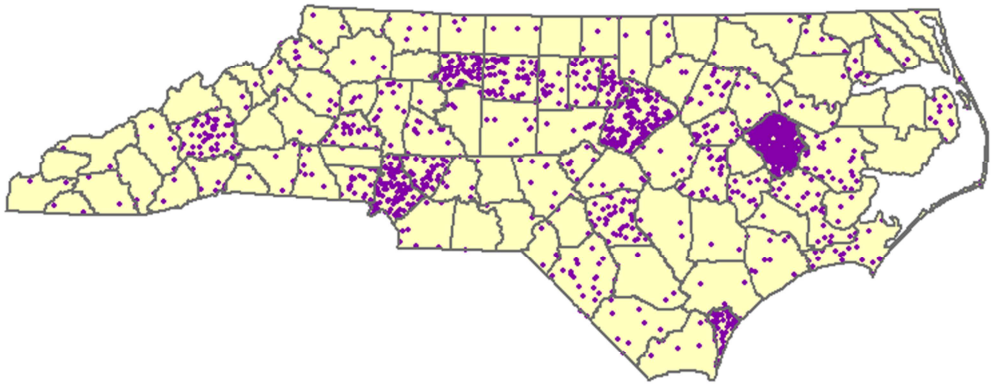
A. Undergraduate Medical Education

Brody School of Medicine continues to deliver on its mission-based promise to train a diverse pool of primary care physicians who will practice disproportionately in rural and underserved areas of North Carolina, thus improving population health and enhancing health equity. The successful formula for this is multi-pronged and involves a holistic admissions process that only considers North Carolina residents and preferences students with backgrounds predictive of desired outcomes. Training and mentoring is provided by a diverse faculty with passionate commitment to the region and state. The curriculum is designed to provide students with meaningful clinical experience in Greenville and with community physicians throughout the state, beginning from year one. Attention to making medical education affordable, such that our graduates can choose a specialty based on their desires, not their loan debt, is important to Brody.

In assessing Brody against peer institutions and national datasets, key indicators of success are clearly demonstrated:

- **We produce the physicians that are needed for North Carolina.**
  - Over time, 2,198 physicians have graduated from BSOM. More than half are practicing in NC and nearly one in five within Eastern NC. All of these graduates were NC residents at the time of matriculation to Brody. For graduates of Brody who remain at Vidant Medical Center (the independent, private non-profit teaching hospital affiliated with BSOM) for postgraduate training, 75% go on to practice in North Carolina.

ECU BSOM Graduates Practicing in North Carolina Counties



  - Brody consistently ranks greater than the 90th percentile nationally for graduates practicing in rural areas, in underserved areas, in North Carolina, in primary care, and in Family Medicine. Nearly 60% of Brody graduates remain in primary care practice five years after graduation.
  - Brody also reliably stays above the 90th percentile for class diversity, especially when looking at underrepresented minorities – who make up 12-18% of each class.
  - Brody has dependably remained among the top five (often #1) in the nation for percentage of graduates who choose to practice Family Medicine each year, according to data from the American Academy of Family Physicians. In fact, one out of four family physicians currently practicing in the state of NC currently is a Brody graduate!
- According to the Association of American Medical Colleges, matriculating Brody School of Medicine students, as compared to national peers, are more ethnically and culturally diverse and have extensive medical and non-medical volunteer activity. Brody sponsors the “Summer Program for Future Doctors” each summer for 30 college students and graduates (http://www.ecu.edu/spfd). Designed primarily for those from underrepresented populations who wish to become physicians, the program

enhances student knowledge of anatomy, biochemistry, neuroscience and physiology, while providing them preparatory academic study skills as well as clinical experience in primary care clinics. Approximately 42% of participants are from Tier 1 and Tier 2 counties and 48% are eventually admitted to medical school.

- For those matriculants who are accepted by more than one medical school, they chose Brody for a number of factors, including rural medical experience, financial cost, Family Medicine opportunity, diversity of faculty, a community based medical experience, diversity of student body, minority/disadvantaged programs, quality of facilities, and sense of security.
- A graduation survey, also conducted by the American Association of Medical Colleges, shows that Brody graduates leave with plans to become generalist physicians (over 50%) who practice in a rural community and/or plan to care primarily for an underserved population. This, along with the low cost of attendance – Brody continues to have among the lowest tuition in the country, and is below the 5th percentile for average level of indebtedness, compared to all other US medical schools – contributes to their ability to choose a specialty unencumbered by future financial needs. Additionally, Brody students come from families with among the lowest median family income of all US medical schools. A high percentage of our graduates report receiving scholarships, stipends and/or grants.
- ***Student performance is strong***. Brody consistently ranks at, or above, national average when compared to other US medical students.
  - At entrance to medical school, Brody students place in the 20th percentile based on their entering MCATs, but after their first two years of medical school training, rise to the 50th percentile in their USMLE Step 1 licensing examination.
  - Following the third year of medical school, performance on the second licensing examination (USMLE Step 2 Clinical Knowledge) remains at the national mean for US medical students. Brody's academic counseling and preparation programs are robust and our students receive extensive and highly individualized attention from faculty throughout their training.
  - One year after graduation, the supervisors of our graduates are surveyed and asked to rank our graduates on their performance as first-year residents. Compared to other medical residents from across the US, Brody graduates rank well above average in all survey items, and notably high in professional demeanor and their interaction with patients and families.
- We are ***advancing medical education*** not only in Greenville, NC, but beyond! Brody was one of only 11 medical schools nationally (out of 118 schools that applied) selected to participate in the American Medical Association's Accelerating Change in Medical Education consortium – these 11 schools are working together over five years to dramatically change how medical student education is delivered. At Brody, the focus is on training that results in graduates being better prepared to participate in, and lead, efforts related to patient safety, quality improvement, team-based care and

population health. For more information: www.changemeded.org and www.ecu.edu/reach.

- Community preceptors – practicing physicians throughout the state who provide real-world training for students in their office or hospital work setting – are critically important to the education of Brody students. These exposures and the learning that occurs in these settings, contribute to our success in graduating the physicians who provide care to North Carolinians. We currently utilize over 200 community preceptors throughout the state. The pressures on these preceptors, and thus their ability to provide this teaching, is currently being challenged by changes in reimbursement, reductions in financial support from NC AHEC (as a results of their successive budget cuts), competition from private medical schools within NC and throughout the US and Caribbean, and increasing regulatory pressures on this type of activity imposed by health systems who are now employing practicing physicians at a greater rate than ever before.

B. Graduate Medical Education (Residency training)

Vidant Medical Center residency programs, for which the teaching and administration is all done by ECU/BSOM faculty, have graduated approximately 2500 physicians from their training programs since they were started in 1978.

- 810 (32%) are practicing currently in North Carolina.
- 372 (15%) are practicing currently in eastern North Carolina.
- 1401 (56%) trained in a primary care specialty.
- Of the 810 practicing currently in North Carolina, 524 (65%) trained in a primary care specialty.
- Brody and VMC graduate a little over 100 physicians each year. Of those graduates, half have trained in primary care and half of those stay in North Carolina.

In recent years, these numbers continued to improve – of the 439 physician graduates from 2010-2013:

- 193 (44%) stayed in North Carolina.
- 124 (28%) stayed in eastern North Carolina.
- Of the 214 that trained in primary care, 108 (50%) stayed in North Carolina.

In July of this year, we welcomed a total of 139 New Residents and Fellows, representing 31 different specialty areas. Sixty-three of the 139 are training in primary care specialties. Twenty-five of these are graduates of BSOM in the following programs: Dermatology, Emergency Medicine, Family Medicine, Internal Medicine, Internal Medicine/Pediatrics, Pediatrics, Surgery, Cardiovascular Disease, Child & Adolescent Psychiatry, Critical Care, Infectious Disease, and Nephrology. Historical data predicts that 75% of this

cohort of residents will remain in NC for practice after they complete their training.

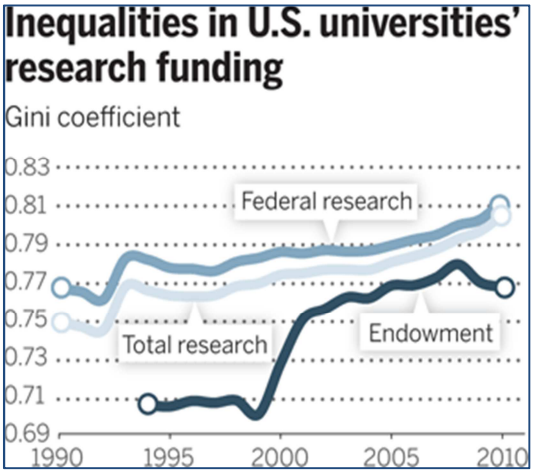
C. Graduate Training Programs (masters, PhD)–
The Brody School of Medicine (BSOM) offers eight graduate programs and two certificate programs in six departments. Six of these programs are Ph.D. programs in the basic medical sciences (Anatomy and Cell Biology; Biochemistry and Molecular Cell Biology, Microbiology and Immunology; Physiology; Pharmacology and Toxicology; and the Interdisciplinary Program in Biological Sciences) and two are Master's level programs (Master's of Public Health and Master's of Biomedical Sciences). Enrollment in the Ph.D. programs is approximately 70-80 per year over the past five years. The MPH program has an approximate enrollment of 90 over the same time period. The MS program is a newer program entering its fourth year of existence and has an enrollment of 14.

These graduate students form the engine that drives basic research at the Brody School of Medicine; they energize more veteran faculty, and most importantly provide critical support to new faculty members in search of funding. Our recent graduates have obtained post-doctoral placement at a number of high-ranking institutes, indicating the quality of training of these students. Many of our graduates from the Master's program have entered Ph.D. programs, Medical School, and industry. Over the last year our students have received a number of awards ranging from patents (provisional), international travel awards (1 of 5 awarded in the US) and have been selected as finalists in the prestigious Presidential Management Fellowship Program.

ECU developed its mission and strategic goals to be closely aligned with those of the greater UNC system. As an integral component of ECU, the graduate programs at BSOM strive to educate students with qualifications that reflect the basic tenets expressed in the mission and strategic directions statements.

II. **Research**

- **Securing Funding:**
  - It is first important to know that more than 80% of total funding is awarded to the top 100 research universities – 700 universities compete for the remaining 20% of funds. (ECU is in this latter cohort.)



About 12% of the research universities receive more than 80% of the funding, while 88% of the Universities scramble for less than 20% of the funding. Because BSOM is small, it will be in this particular competitive posture for the foreseeable future, likely indefinitely.

Source: *Science 23 May 2014: vol. 344 no. 6186 809-810*

- The data below suggest that the university overall is weathering the storm better than some of its peers, improving in total research expenditures compared to the peer cohort, holding ground in Federal funding awards, and out competing the peers with industry sponsors, leading to an overall increase in relative ranking. The increase in research expenditures despite decreases in extramural awards reflects a commitment by the university to strengthen its research programs by targeted investment.

R&D Expenditures (Source: NSF HERD Survey)

	Year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	**2012**
Total R&D Expenditures (Millions of Dollars)	**13**	14	15	15	16	17	25	24	28	**32**
National Rank	**264**	265	265	262	255	259	240	255	248	**233**

KPI benchmark: $20.5M	**Percent from federal sponsors**	**Percent from industry sponsors**
• ECU: 14% increase	ECU: 56%	ECU: 15%
• Peers: 0.4% increase	Peers: 54% to 58%	Peers: 6%

- Although funding for research has decreased, the faculty base has been relatively stable. As state and federal resources each decreased, however, pressure has increased on practice plan revenue, pulling more faculty FTE into and further exacerbating research funding by reducing FTE opportunity to pursue grants. While this phenomenon is not unique, Brody is small, the fiscal balance is fragile, and even small perturbations in a revenue stream can have very large impacts.

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	2012-2013			2013-2014		
	articles	**chapters**	**presentations**	**articles**	**chapters**	**presentations**
BSOM	529	104	309	586	56	324
ECU	1692	339	1619	1845	300	1749
BSOM/ECU (%)	31.26	30.68	19.09	31.76	18.67	18.52
BSOM normalized to T/TT FTE	2.75	0.43	1.29	2.90	0.23	1.33
ECU normalized to T/TT FTE	2.03	0.29	1.40	2.08	0.26	1.50
BSOM normalized to total FTE	1.48	0.23	0.70	1.54	0.12	0.71
ECU normalized total FTE	1.28	0.18	0.88	1.30	0.16	0.94

- Based on the most recent two years of data, tenured or tenure track faculty (T/TT) have averaged between 2.5 and 3.0 peer reviewed articles per faculty per year, and tend to run higher than the academic community at large at ECU. This aspect of scholarly activity also runs ahead of overall faculty distribution. BSOM typically has averaged approximately 20% (18.14-20.98%) of the university's tenure track faculty, but accounts for about 31% of the peer reviewed articles. In recent years, BSOM faculty average less than one presentation per faculty member per year, which is a reflection of the budgetary impact on travel funds. Researchers must present their work, typically in a national setting, to be recognized for their work and the loss of visibility, the loss of networking, the decreased ability to form new collaboration and the loss of access to the current trends in breaking science all lead to decreased research funding in the ultra-competitive extramural funding environment.

- **Delayed Impact**
  - The impact of budget cuts at both the federal and state level are not immediately apparent. Existing grants with multiyear timelines absorb some of the expenses previously covered by state funds, and RIFs are delayed by a re-allocation of expenses where feasible. By FY 2012-2013, however total awards had decreased by nearly 35% from just two years prior. There has been a modest rebound in the recently completed fiscal year, but this lags significantly below awards in the first half of the six year period. It is important to note that the budget reductions at the federal and state level have a large impact even if the impact is not apparent in the same fiscal year.

Brody School of Medicine	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Grand Total
F & A Awarded	$2,628,104	$2,599,685	$3,018,153	$3,048,040	$ 2,667,451	$ 2,495,687	**$ 16,457,121**
Total sponsored activity awarded	$23,641,538	$25,154,783	$26,639,804	$21,956,607	$17,403,909	$22,256,162	**$137,052,803**
estimated overall effective F & A (% of awards)*	11.12	10.33	11.33	13.88	15.33	11.21	12.01
T/TT FTE count	235	218	225	240	240	244	
total FTE count	430	406	420	436	444	459	
F&A $ per FTE (T/TT only)	$ 11,183	$ 11,925	$ 13,414	$ 12,700	$ 11,114	$ 10,228	
F&A $ per FTE (total)	$ 6,112	$ 6,403	$ 7,186	$ 6,991	$ 6,008	$ 5,437	
Awards $ per FTE (T/TT only)	$100,602	$115,389	$ 118,399	$ 91,486	$ 72,516	$ 91,214	
Awards $ per FTE (total)	$ 54,980	$ 61,958	$ 63,428	$ 50,359	$ 39,198	$ 48,488	

- **Importance of Indirect Costs from Grant-Funded Research (F&A)**
  - F&A costs, otherwise referred to as the Facilities and Administrative Expenses, are indirect costs that are recovered in grant funding for expenses not directly related to a grant. These may include the maintenance costs for the building where the research is conducted and the administrative costs of a grant. Our effective F&A rate has averaged about 12% over the last six years (range = 10.3 -15.3%), while the federally negotiated rate during that time was 43-47.7%. This is predominantly due to the fact that Brody's portfolio of sponsored activity is heavily skewed to service contracts which typically carry little or no F&A. Consequently, the sponsored activity in BSOM generates very little "margin" with which to buffer changes, or to re-invest in strategies/infrastructure that positions us to better compete in new initiatives.

College/School	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	Grand Total
Brody School of Medicine (F&A)	$ 2,628,104	$ 2,599,685	$ 3,018,153	$ 3,048,040	$ 2,667,451	$ 2,495,687	**$ 16,457,121**
ECU Total (F&A)	**$ 4,510,247**	**$ 4,524,009**	**$ 4,836,070**	**$ 4,803,380**	**$ 4,381,484**	**$ 4,014,163**	**$ 27,069,353**
BSOM % of ECU Total (F&A)	58.27	57.46	62.41	63.46	60.88	62.17	60.80
Brody School of Medicine (awards)	$23,641,538	$25,154,783	$26,639,804	$21,956,607	$17,403,909	$22,256,162	**$137,052,803**
ECU Total (Awards)	$38,315,116	$43,041,917	$38,083,724	$45,127,536	$35,790,081	$43,023,784	**$243,382,158**
BSOM % of ECU Total (Awards)	61.70	58.44	69.95	48.65	48.63	51.73	56.31
T/TT FTE BSOM	235	218	225	240	240	244	
Total T/TT FTE ECU	1207	1202	1187	1206	1158	1163	
BSOM % of ECU total T/TT FTE	19.47	18.14	18.96	19.90	20.73	20.98	
total FTE BSOM	430	406	420	436	444	459	
total FTE ECU	1743	1760	1813	1865	1834	1855	
BSOM % of ECU total FTE	24.67	23.07	23.17	23.38	24.21	24.74	

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- The data above serves to place BSOM in the context of ECU overall. Medical schools often show higher levels of productivity, but the disproportion seen at ECU per capita indicates that impacts on the medical school sponsored programs has a rippling effect on the entire university. Research is concentrated in the medical school and there are no buffers in the university against loss of funding in the medical school. The total dollars generated in the F&A from the medical school contributes to overall infrastructure support for the entire, much larger University, and growth opportunities are limited for the reasons described above.

Moving Forward

- A number of new initiatives are underway to increase/optimize opportunities and success in research in the medical school. One such initiative is an internal "east west" grant program to leverage expertise in the medical school and cultivate new collaborations between faculty on the medical and the main campuses.
- In the School of Medicine, the basic science doctoral programs are consolidating and restructuring to better train graduates for the jobs of the future. The umbrella program structure is expected to be in place within the next two years, and concentrations to focus training for job opportunities outside traditional academia are being developed.
- A group of investigators that had previously functioned as the "diabetes center" without walls, has been physically co-located in common and up-fitted research space as the interdisciplinary East Carolina Diabetes and Obesity Institute to focus further research development and capitalize on strength in the area of diabetes, obesity and metabolic diseases.
- Plans are developing to organize spaces and investigators along common interests. New management models are being developed to accommodate these new research organizations. A major goal is to blend labs with clinically trained faculty seamlessly with those in basic sciences to enhance opportunities for translational discussions, and to partly mitigate the extraordinary clinical pressure on our physician scientists.
- Creating blocks of open space also is a goal of the re-organization, as a means with which to attract potential "for profit" ventures, and increase the probability of productive "public-private" partnerships.
- BSOM is exploring partnerships with UNCW's MARINEBIONC center, to leverage BSOM's strengths in preclinical testing with UNCW's strengths in marine sciences. Similarly, BSOM has recently partnered with NCSU in a well–regarded scored center grant with HIESH (funding decisions have not been announced).
- BSOM's growing programs in public health are enabling, for the first time, systematic study of the unique characteristics of the population health in eastern NC. The significantly increased incidence and severity of virtually every major disease in this part of the state has long been known, and now with expertise in public health, the potential to develop inroads to understanding the basis for those disparities is becoming a reality.

- BSOM's cardiovascular group has long been a national and international leader in interventional cardiac procedures, and engages in several either first in, or first in U.S. clinical trials.
- Nearly 25% of each first year medical student class elects to undertake a summer research fellowship, testament to a rich scholarly environment present here.

III. Health Care

- **Largest multispecialty medical group practice east of I-95** – ECU Physicians provides essential primary care and specialty services to patients from across eastern NC and throughout the state, with patients coming from all 100 North Carolina counties.
  - ECU Physicians partners with Vidant Health, an independent private not-for-profit corporation, in the delivery of services across 29 counties. The flagship private Vidant Medical Center is the 900-bed teaching hospital that serves as the primary teaching site for the medical school.
  - During the 2013-2014 fiscal year, the 368 credentialed physician faculty of ECU Physicians cared for patients in over 375,000 clinic visits, more than 135,000 emergency department encounters, and nearly 125,000 in-patient hospital days. More than 460,000 procedures were performed in the hospital or clinic setting. This work cumulated in over 1.6 million work RVUs (a national measure of physician work effort). Ninety percent of these encounters are with the people of the surrounding region.
- **Safety net** – ECU Physicians serves as the vital safety net for patients from across the region. More than 10% of our patients have no healthcare insurance, while another 22% have Medicaid.
  - Providing health care to these patients is essential both to maintain a healthy workforce for North Carolina and to control the overall costs of health care to society. It is clear that lack of access to care only results in medical conditions becoming more severe, whether the patient has cancer, diabetes, heart disease or any of the other major disorders that are strikingly prevalent in eastern North Carolina, with rates that surpass any other region in the nation. Delays in providing essential services in the out-patient setting inevitably lead to hospital admissions with extremely high costs and lengthy absences from work.
  - ECU Physicians is the only eastern North Carolina provider of tertiary medical care in the fields of transplant, adult and pediatric intensive care, pediatric heart surgery, pediatric endocrinology, robotic heart valve surgery, and many other fields.
  - ECU Physicians provides the trauma surgeons and intensive care physicians for the only Level 1 designated trauma center in the region.
  - With three medical toxicologists, ECU Physicians has the most robust clinical toxicology service of any medical school in the state. This includes an expert in snake bite envenomation who has international stature in his field.

- **The East Carolina Heart Institute** – The pioneering work on using robotic surgery techniques to treat mitral valve disease was done in Greenville and now serves as the model for the world. ECHI provides in-house training for more heart surgeons from around the world on robotic valve surgery techniques than any other institution. In addition, our surgeons travel to more than a dozen countries each year to train other medical teams. Since the outset of the program, the facility has trained over 700 surgeons and 400 team members from across the globe.
- **Telepsychiatry** – The North Carolina Statewide Telepsychiatry Program, funded by the NC Legislature in 2013 to help alleviate the mental health treatment challenges in NC, links patients in emergency departments across the state with mental health professionals for vital intake services, thus dramatically shortening the time needed to begin the evaluation and treatment of North Carolinians with behavioral illnesses. The service is enhanced through a $1.5 million grant from the Duke Endowment funding further expansion.
- **Transcranial Magnetic Stimulation (rTMS) Therapy** – In the fall of 2013, the Department of Psychiatric Medicine started providing a non-drug treatment for depression. This offers a new approach for those patients with chronic depression who have not benefitted from antidepressant medication treatment.
- **Family Medicine Center** – In 2011, the Department of Family Medicine moved to a state-of-the-art teaching, research, and clinical care facility that has quickly become the standard for academic family medicine departments across the nation. With a rich tradition of training family physicians who practice in North Carolina communities, the department now benefits from extraordinary clinical and teaching resources that provide a model that learners can build on when they launch their own practice.
- **Electronic Health Record** – In partnership with Vidant Health and Vidant Medical Center, ECU Physicians is fully utilizing an electronic health record that brings all the information for a patient to one record, thus dramatically increasing patient safety and the efficiency of care. The system uses software from Epic Systems, which is the industry leader and has since been adopted by other medical schools in North Carolina.
- **Brody School of Medicine challenges** – At its birth, then East Carolina University School of Medicine was created without also creating a hospital within the university. The school was affiliated with Pitt County Memorial Hospital. Although this arrangement has preserved the independence and importance of both institutions over time, the lack of common ownership of the school and hospital has prohibited the unrestricted flow of mission support funds flowing from the hospital to the school, which is the norm at dozens of other medical schools across the state and nation.
    - From the outset, the medical school also agreed to not develop clinical departments that would compete with local private physicians' practices, specifically in the more financially productive medical specialties; this includes services such as radiology, orthopedics, and anesthesiology. The

school's emphasis on primary care has been extremely successful, widely celebrated, and often emulated. However, this emphasis brings major financial limitations not experienced at other medical schools. The reimbursement for an office visit with a primary care physician is much less than the fee paid to physician providing a highly specialized procedure.

- The Brody School of Medicine did not receive any direct support for its role as the dominant safety net provider in the eastern third of North Carolina until 2007. For the preceding 30 years of its history, the clinical practice worked with the weighty responsibility of caring for indigent patients sent from private physicians' offices throughout the region and did not have the benefit of any public funding support. Only in 2009 was $2 million in state appropriations approved to offset a small portion of the $10 million of care provided each year for indigent patients; since that date, this appropriation has been diminished by state funding cuts.
- As a result, the Brody School of Medicine works valiantly to shoulder this major obligation for care for indigent patients from across eastern North Carolina as the region's only major public institution, even in the face of extremely limited external support. There is a heavy emphasis on out-patient care, where the reimbursement from insurance is often markedly less than that for services provided within a hospital.

IV. Economic Impact

A detailed economic impact study of the Brody School of Medicine conducted by Dr. Thomas K. Ross, Ph.D. in June 2011 concludes:

"This study has demonstrated eastern North Carolina receives great benefit from the Brody School of Medicine. The local community sees an increase of more $587,000,000 due to the location of the School and the inclusion of indirect employment increases this benefit to more than $909,000,000. Direct employment was estimated to 4,956 and indirect employment added another 7,943 jobs for a total job impact of 12,899."

As calculated by Dr. Ross, the investment by the state of North Carolina for each direct and indirect job created by the Brody School of Medicine is $2,905 per job.

The study continues,
"State and county statistics support the findings of the study. Pitt County continues to see strong income and population growth with low unemployment rates compared to neighboring counties. The School of Medicine has also brought large non-economic benefits to eastern North Carolina through expanding the supply of physicians, improving health status, and increasing access for minorities to higher education.

The main function of higher education is to prepare students for future success and a key factor of future success is to provide students with the skills to succeed in an occupation and serve the health care needs of North Carolina. The Brody

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School of Medicine prepares students for high paying and rewarding careers in medicine. The study showed students receive high returns on their investment in higher education and the state of North Carolina also sees higher future tax revenues based on higher student incomes.

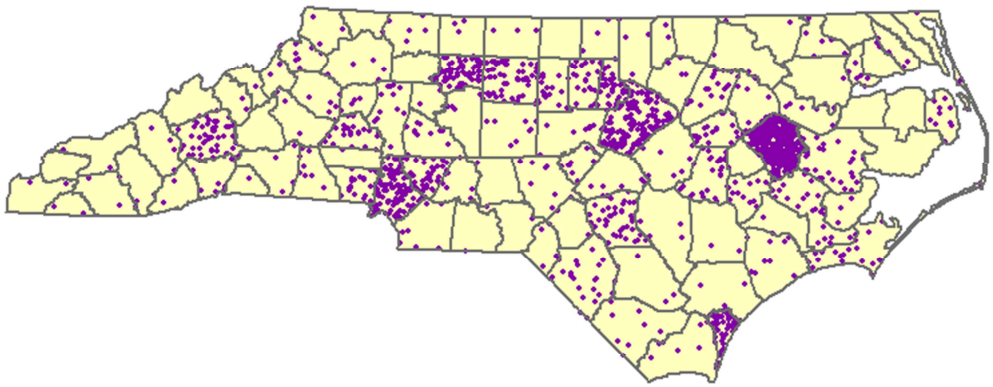
This study demonstrates that ECU and the Brody School of Medicine are successful in preparing its students for future careers and provides both immediate and long term benefits to the citizens of Pitt County and the state of North Carolina."

- A recent fact sheet developed by Merritt Hawkins, the leading physician search and consulting firm in the U.S., further supports the magnitude of the Ross study. Merritt Hawkins found that, on average, each physician supports a total economic output of $2.2 million annually; 14 jobs; a total of $1.1 million in wages and benefits annually and $90,449 in state and local taxes per year. Based on the 1,382 Brody graduates who currently practice in North Carolina, this would represent a contribution of over $3 billion dollars to the state economy annually."

V. Workforce Development

Since its inception, 2198 physicians have graduated from the Brody School of Medicine. Over 2500 physicians have been trained in Brody's Graduate Medical Education programs (residency).

ECU BSOM Graduates Practicing in North Carolina Counties



VI. Societal Impacts

The Brody School of Medicine has had very substantial positive impacts in improving the diversity of physicians in North Carolina, leading to an improvement in the number of physicians practicing in minority and underserved areas of the state. This increase in physicians practicing in these underserved geographic areas and communities has improved access to health care while simultaneously improving key population health measures.

- **Diversity**
  - While the diversity of the health professions workforce still does not match the diversity of North Carolina's population, the greatest increase in diversity of health practitioners in recent years (1994-2009) has been among primary care physicians. The percentage of primary care physicians in North Carolina who are non-white increased (doubled) from 13% to 27%.
- **Access to Health Care**
  - In rural (non-metropolitan) counties, the ratio of primary care physicians per population increased in 20 years (1992-2012) by 18%, from 5.0 to 5.9 per 10,000 population.
- **Population Health Changes**
  - Since the opening of Brody, eastern North Carolina has seen a significant improvement in age-adjusted mortality rates (eastern NC age-adjusted mortality rates are projected to match the remainder of NC by 2020 – in 1979, the rates in eastern NC were significantly worse than state rates) Mortality rates in Eastern North Carolina are now improving at a faster rate than in the rest of the state. All-cause, age-adjusted mortality decreased between 1998 and 2012 by 21% in Eastern North Carolina (29 counties) compared to only 17% for the rest of the state. With progress like this, it is possible to see the regional disparity eliminated in the next 20 years but health disparities persist in our rural counties.
  - Significant progress has been achieved in reducing racial disparities in mortality in the region. The non-white male mortality rate (age-adjusted) decreased by 32% compared to only 21% for white males; projections suggest the racial disparity among men in eastern North Carolina can be eliminated within the next decade. The non-white female mortality rate decreased by 25% in this time period and the racial disparity among females in the region is projected to be eliminated by 2020.

VII. Return on Investment

A wide variety of resources – both public and private – are required to educate, train and ultimately produce a Brody medical school graduate. Some of the resources required include:

- Faculty/Staff
- Facilities
- Support Services (such as tutoring, academic counseling, clinical skills assessment and simulation centers, etc.)
- A teaching hospital (Brody partners with the private, non-profit Vidant Medical Center)
- Community-based preceptors

The people of North Carolina receive an outstanding return on their public dollars invested. A detailed financial summary follows in this report; however, a high-level calculation demonstrates the value clearly. Over the last four years North Carolina provided $176,400,287 in public funds to help support the School. Brody's graduates

remain to practice in North Carolina at a 53.7% rate. Of the 291 graduates between 2011 and 2014, based on historical trends, 156 will practice in North Carolina. Hence, the public funds invested to produce each Brody physician practicing in North Carolina is $1,130,771. According to economic impact studies, each of these Brody graduates practicing in North Carolina will produce $90,449 in local and state taxes annually. The direct return in taxes paid on the initial public investment over a 30-year career is $2.7 million - nearly a 3 to 1 ROI. In addition, each of these Brody graduates will contribute $2.2 million in economic output annually – over a 30-year career in practice, this represents over $66 million in economic activity benefitting the State of North Carolina for each graduate. Cumulatively, the last four years' graduates are expected to contribute nearly $10.3 billion to the North Carolina economy and over $423.3 million in state and local taxes during their career. This represents an outstanding financial return on public investment in the Brody School of Medicine per graduate practicing in North Carolina.

VIII. State Revenue Trends

The enclosed revenue/expenditure schedule for the Brody School of Medicine shows that from FY 2005-2006 to FY 2013-2014 state appropriations made to the medical school increased from $42.77 million to $44.59 million. These increases result from several funding increases including:

- Legislated compensation increases in some of the years;
- Budget adjustments related to increased fringe benefit costs;
- Enrollment increase in recognition of Brody increasing its annual medical student class size from 72 to 80;
- A new Indigent Care appropriation to the medical school for services provided by ECU Physicians (faculty physicians working in the academic multi-specialty physician practice of the Brody School of Medicine) to uninsured patients who do not qualify for public insurance and who are unable to acquire commercial insurance; and
- An appropriation for the new Department of Public Health.

These appropriation increases have been instrumental in allowing Brody to expand its mission accomplishment by graduating larger numbers of physicians, the majority of who choose primary care as a specialty and the majority of who will practice medicine in North Carolina. The Indigent Care appropriation and the addition of a Department of Public Health are both consistent with the school's mission of improving the health of the public in eastern North Carolina. The legislated increases and the increased budget related to higher fringe benefit costs are crucial for the recruitment and retention of the faculty and support staff required for the school to function.

The Brody School of Medicine considers all state appropriations, both the new or increased appropriations referenced above and the base appropriations, to be an investment by the state's taxpayers in the multiple missions of the school and is dedicated to ensuring the state receives appropriate returns on its investment. The school's accomplishments, discussed previously in this document and sustained

over decades, are evidence of the returns the school has made and continues to make on the state's investment.

While the school has benefitted from increases in appropriations, it also continues to deal with the challenges of reductions in appropriations. In recent years, the frequency and the magnitude of permanent state appropriations budget cuts are jeopardizing the school's ability to provide the numbers of highly-skilled physicians needed to address the medical needs of a growing and aging North Carolina population.

The Brody School of Medicine, like almost all state agencies, has seen permanent budget reductions in seven of the last 10 fiscal years. The total permanent state budget cut for this 10-year period is almost $11.1 million. The cut represents the loss of just over 25 Faculty Positions Exempt from the Human Resources Act (EHRA), almost seven Non-Faculty EHRA positions, more than 42 support staff positions Subject to the Human Resources Act (SHRA), and operating budget reductions.

While the total cuts are close to $11.1 million ($11.07 million), the total impact—over the ten-year period—is much higher. The table, below, illustrates that each year's individual impact, when added to additional yearly impacts, generates a total, multi-year impact of just under $51 million (almost a multiple of five of the $11.1 million).

The Brody School of Medicine at East Carolina University

Multi-Year Impact of Permanent State Budget Cuts

FY 2004-05 through FY 2013-14 (reported in ***Millions***)

	Extended Impact of Individual FY Reductions										
FY	**2004-05**	**2005-06**	**2006-07**	**2007-2008**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**Total Extended Impacts**
2004-05	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	6.144
2005-06		0.724	0.724	0.724	0.724	0.724	0.724	0.724	0.724	0.724	6.516
2006-07			-	-	-	-	-	-	-	-	-
2007-08				0.612	0.612	0.612	0.612	0.612	0.612	0.612	4.287
2008-09					0.453	0.453	0.453	0.453	0.453	0.453	2.717
2009-10						3.777	3.777	3.777	3.777	3.777	18.886
2010-11							-	-	-	-	-
2011-12								3.745	3.745	3.745	11.235
2012-13									-	-	-
2013-14										1.145	1.145
Total Annual Impact	**0.614**	**1.338**	**1.338**	**1.951**	**2.404**	**6.181**	**6.181**	**9.926**	**9.926**	**11.071**	**50.930**
Multi-Year Impact	**0.614**	**1.953**	**3.291**	**5.242**	**7.646**	**13.826**	**20.007**	**29.933**	**39.859**	**50.930**	

During this time period when Brody has seen significant permanent state budget cuts, North Carolina continues to see impressive growth. From 2005 to 2014, the state's population increased from 8,683,242 to 9,848,060: a 13.4% increase (Source: U.S. Census Bureau). However, a troubling trend related to access to primary care physicians has developed. In 2005, North Carolina had 7,660 primary care physicians.

By 2011, the number of primary care physicians had *declined* to 7,520: an almost 2% decrease (Source: *North Carolina Health Professions Data Book* for 2005 and 2012; 2012 is the last published version of this report). Thus, while the state's population is increasing substantially, the number of primary care physicians is decreasing. One of Brody's legislated missions is to increase the number of primary care physicians, and as is reflected earlier in this report, Brody has been highly successful in graduating primary care physicians, most of who practice in North Carolina. While it is unrealistic to expect that the almost $11.1 million of lost state budget will be restored, Brody can assert that if given greater resources, it will be successful in graduating more highly trained and skilled primary care physicians who will predominantly practice in North Carolina.