

Report to the Board of Governors  
University of North Carolina System

**2020 UPDATE:**  
**PRIMARY CARE EDUCATION PLANS**

From

NC Schools of Medicine

Nurse Practitioner and Physician Assistant Programs

North Carolina Area Health Education Centers (AHEC) Program

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

April 2020

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## Legislative Mandate

During its 1993 session, the North Carolina General Assembly expressed its interest in expanding the pool of generalist physicians for the state. In Senate Bill 27 as amended by House Bill 729, the General Assembly mandated that each of the state's four schools of medicine develop a plan setting goals for an expanded percentage of medical school graduates choosing residency positions in primary care. Primary care was defined as family practice, internal medicine, pediatrics, and obstetrics-gynecology. It set the goal for the ECU and UNC Schools of Medicine at 60 percent of graduates. For the Wake Forest University and Duke University Schools of Medicine, it set the goal at 50 percent.

The General Assembly also mandated that the N.C. Area Health Education Centers (AHEC) Program develop a plan to expand the number of primary care residency positions. Finally, the legislature mandated that a monitoring system be developed by the Board of Governors to report on specialty selection by medical students at graduation and five years after graduation.

In 1994, the four schools of medicine and the N.C. AHEC Program submitted primary care educational plans for increasing the percent of medical school graduates choosing primary care residency programs and subsequently generalist practice. General Statute 143-613 as contained in House Bill 230 passed in the 1995 session of the North Carolina General Assembly requires an update of these plans beginning in 1996 and every two years thereafter. Programs for physician assistants, nurse practitioners and nurse midwives were also required to submit plans with strategies for increasing the percentage of graduates entering primary care and to be updated on the same timeline.

The plans of the four schools built upon the unique missions and programs of the schools. Although specific activities differ between the schools, they all implemented initiatives in similar areas in order to increase the percentage of graduates choosing careers in primary care. In each case, the schools also built upon their long-standing relationships with the AHEC Program in order to conduct increased medical student and primary care residency training in community settings.

Though not required, we have added the report from Campbell University Jerry M. Wallace School of Osteopathic Medicine.

## Executive Summary

Many of the strategies mentioned in the 2018 report for increasing the percentage of graduates entering primary care are still active in 2020. Schools continue to:

- Identify & recruit students with an interest in primary care, especially those from rural and less resourced areas
- Seek HRSA and other grant opportunities to explore innovative models to better prepare the primary care workforce
- Develop regional campuses to maximize outreach and connect with primary care providers as teachers across the state
- Promote team based cost-effective health care
- Increase student enrollments and opportunities to participate in community primary care learning experiences
- Expansion of rural residencies in primary care and needed specialties

### What is new in the 2020 plans?

- Renewed interest in Interprofessional Education (IPE) & Interprofessional Practice (IPP)
- Interest in developing PA residency programs
- At least one new school (Pfeiffer University PA)
- Growing interest in simulation training and showing the value that students bring to health care settings

### Challenges

The primary challenges remain constant. First, measuring the success of school efforts to increase advance care practitioner students entering primary care is unreliable. As mandated in the 1993 legislative session, AHEC and the Cecil Sheps Research Center track the practice specialty and location of medical school students five years after graduation, but no similar efforts are supported for tracking NP, CNM & PA students. These schools depend largely on self-report and alumni records to verify the practice specialty and location of their students after graduation.

Second, the shortage of quality clinical teaching sites in community primary care settings continues to be the most significant challenge facing NC's health science programs. Many schools continue to increase enrollments despite the challenges of securing enough sites for existing students. The merger of healthcare systems, increased ownership of physician practices by those systems and growing focus on productivity by those practices further limits the number of community sites willing and capable of teaching students. As a result schools are increasing the use of IT/simulation training as well as documenting the value that students bring to a health care setting in hopes of persuading systems to become teaching sites.

Our 2018 report highlighted initial efforts to address this challenge by convening a statewide precepting work group. Since then NC AHEC has moved forward on the primary two recommendations:

A. Creating a tax incentive for community preceptors

NC AHEC recently convened a group of key stake holders to confirm statewide support going forward and begin drafting strategies for introducing this to the NC legislature. Four states (Georgia, Maryland, Colorado & Hawaii) have successfully passed a tax incentive legislation and our group will draw upon their success in developing a proposal for NC.

Stakeholders included:

NC Healthcare Association

NC Academy of Family Practice

UNC-General Administration

NC Medical Society

NC Academy of Physician Assistants

NC Pediatric Society

NC Board of Nursing

NC Independent Colleges & Universities

B. Standardizing student onboarding processes for all training sites in NC

NC AHEC has a strong start on achieving this through the Consortium for Clinical Education & Practice (CCEP) developed by AHEC in 2008. Many nursing schools and health systems have already adopted this model and our goal now is to expand it to all sites, health science schools and disciplines. This will require additional resources.

NC AHEC is also a pilot site for the Society of Teachers of Family Medicine (STFM), a national organization of Family Medicine educators, to standardize onboarding processes. In addition to the pilot objectives, we have used this opportunity to introduce CCEP to all five NC medical schools.

New for this report we asked schools “**What actions should we as a state commit to over the next two years to ensure that we recruit, train and retain a qualified and adequate number of primary care providers in NC?**”

While responses were limited, several suggestions were made:

- Fund a program like NC State Education Assistance Authority (NCSEAA’s) Forgivable Education Loans for Service (FELS) or the National Health Service Corps Loan Repayment program that provides free tuition and add a stipend for living expenses in exchange for working in a rural and underserved primary care site in NC.
- Provide more low-cost housing for students who do clinical rotations in a rural and underserved primary care sites in NC, particularly to public programs who take 80% or more of their students from North Carolina.
- Provide additional funding to pay clinical preceptors in rural and underserved primary care sites in NC, particularly to public programs who take 80% or more of their students from North Carolina.

- Support of faculty members in health care programs with loan repayment or forgiveness. There is a shortage of PA faculty nationwide, and retention of quality educators can be difficult. A major barrier is salary. [As a note, we recognize a similar challenge for nursing and other faculty]
- Direct support of clinical preceptors practicing in medically underserved areas. More incentives for them to take students.

AHEC is pleased to report that we surveyed NC health science schools in 2019 regarding their need for student housing especially in rural and less resourced areas of the state. We are developing a response to meet identified needs. We have already committed additional funds to our most eastern and western centers (Eastern AHEC, Greenville and Mountain AHEC, Asheville) to expand student housing in order to make community sites more available to students on clinical rotations. NC AHEC provides over 50,000 nights of student housing annually and look forward to increasing our capacity even further.

NC AHEC is uniquely positioned to bridge community and academic partners to address the need for a primary care workforce in NC. Our mission and vision remain constant:

### **Mission**

The NC AHEC Program provides and supports educational activities and services with a focus on primary care in rural communities and those with less access to resources to recruit, train, and retain the workforce needed to create a healthy North Carolina.

### **Vision**

We envision a state where every North Carolinian is healthy and supported by an appropriate and well-trained health workforce that reflects the communities it serves.

The NC AHEC Program will continue to lead and to partner with others to develop and support educational programs and supports focusing on primary care. The COVID-19 pandemic is causing health leaders and health systems to re-evaluate how care is delivered and how patients, communities and providers are supported. We intend to use the time between this report and the next report to learn from these experiences and how education and training should be adjusted to respond to these lessons learned.

We will also use this time to advance education and support for interprofessional education and practice and to re-evaluate how that focus affects and support primary care.

We look forward to working with our partners to identify opportunities to continue to improve primary care education in North Carolina.

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

Primary Care Medical Education Plan  
Update

From

Campbell University

Jerry M. Wallace School of Osteopathic Medicine  
(CUSOM)

March 2020

Respectfully submitted by:

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## 1. Introduction

It is evident from published data that North Carolina, with a population of 10.39 million people, is one of the fastest-growing states in the nation. The population increase and diminishing supply of physicians have exacerbated the critical need for additional primary care physicians in North Carolina. According to findings published online by the Association of American Medical Colleges Center for Workforce Studies ([AAMC 2019](#)), North Carolina ranked 28<sup>th</sup> out of 50 states with 255 physicians per 100,000 population, below the national median of 257.6. North Carolina ranked 33<sup>rd</sup> out of 50 states with 86.2 active primary care physicians per 100,000 population. The national median was 90.8 primary care physicians per 100,000 population ([AAMC 2019](#)). According to the same report by the AAMC, there were 26,481 active physicians in North Carolina. 28.6 percent of North Carolina physicians were age 60 or older. Nationally, only 11 percent of physicians practice in rural areas ([NCSL](#)). Nearly 57 percent of DOs in active practice are primary care physicians ([2018 Osteopathic Medical Profession Report](#)).

Campbell University carefully studied this information along with the North Carolina Institute of Medicine's "Providers in Demand: North Carolina's Primary Care and Specialty Supply" (2007), which detailed the status of healthcare providers in North Carolina. Findings from the COGME 20th Report "Advancing Primary Care" (2010) and the 2006 U.S. Department of Health and Human Services Health Resources Service Administration (HRSA) report, "Physician Supply and Demand: Projections to 2020" (2006) documented a significant shortage of primary care physicians throughout the United States. The need for additional specialty physicians in North Carolina was also apparent. The North Carolina Institute of Medicine (2007) acknowledged that physician growth would likely remain stable over the next 20 years, but the population growth would outpace the growth in the physician population.

While the focus of physician workforce research had been on primary care physicians in rural and underserved areas, the need also included many other medical specialties, such as general surgery, OB/GYN, dermatology, and geriatrics. The American College of Surgeons conducted its own studies and noted a growing trend in the shortage of general surgeons in the United States (2009). This was very noticeable in North Carolina where there were 26 counties with no general surgeons with a majority of these counties located in eastern North Carolina. Additionally, according to the Council on Graduate Medical Education (COGME) (2010), the quality of healthcare is linked closely to patients receiving adequate primary care. Mortality decreases with 1.44 fewer deaths per 10,000 population for each primary care physician added to the workforce.

Based on this information, Campbell University established the Jerry M. Wallace School of Osteopathic Medicine (CUSOM), making it the 5<sup>th</sup> medical school in North Carolina. Campbell University believed that the osteopathic medical school model of training medical students in community-based clinical sites, including underserved areas, was best suited for meeting the mission and vision of its medical school. CUSOM opened its doors to 162 medical students in August 2013 with the goal of adding physicians who are deeply convicted and care about the needs of the population in North Carolina and will be willing to stay and make a difference in the rural and underserved areas of our state.



## **2. Admissions / Enrollment**

The mission of CUSOM is to educate and prepare community-based osteopathic physicians in a Christian environment to care for the rural and underserved populations in North Carolina, the southeastern United States, and the nation. CUSOM has adopted admissions policies and criteria designed to meet its mission and vision.

CUSOM faculty, staff and students value teamwork, leadership, professionalism, integrity, diversity, and the ethical treatment of all humanity.

### **The goals of the CUSOM Office of Admissions are to**

1. Recruit osteopathic medical students who are committed to serving the rural and underserved areas in North Carolina, the Southeastern United States, and the nation.
2. Recruit a diverse student body.
3. Recruit students from North Carolina, the southeastern United States, and the nation.
4. Facilitate and promote the selection of osteopathic medical students who will become successful practitioners in the art and science of osteopathic medicine using the most current research in clinical and basic science.
5. Recruit students from or who reside in rural communities.

### **CUSOM Admissions Process**

The Office of Admissions ensures qualified students are selected for matriculation to the Doctor of Osteopathic Medicine Program at Campbell University.

CUSOM is committed to selecting applicants who are an asset to the profession of osteopathic medicine. The goals of the admissions process include considering each applicant's interest in serving rural and underserved populations.

Our target area, based upon our mission statement, is North Carolina and the Southeastern United States, which is defined as South Carolina, Virginia, Alabama, Florida, Georgia, Kentucky, Mississippi, Tennessee, and West Virginia.

The table below details the number of students applying to CUSOM from North Carolina and the southeast for the past eight years, as of February 12, 2020.

<b>Year of Matriculation</b>	<b>Total Number of Applicants</b>	<b>Total Number of NC Applicants</b>	<b>Total Number of NC Matriculants</b>	<b>Total Number of SE US Applicants</b>	<b>Total Number of SE US Matriculants</b>	<b>Total Number of Matriculants</b>
2013	3,836	259	41	1,268	76	162
2014	4,529	281	43	1,019	70	162
2015	5,211	328	40	941	72	162
2016	4,884	336	58	1,149	87	162
2017	3,862	301	41	993	84	162
2018	4,013	387	67	1,036	101	162
2019	4,423	378	68	1,193	104	162
2020**	4,286	339	n/a	1,077	n/a	n/a

\*Numbers include all IT states (NC, AL, FL, GA, KY, MS, SC, TN, VA and WV).

\*\*Numbers current as of February 12, 2020

### **3. Curriculum**

#### **First and Second Year Curriculum**

The CUSOM curriculum is specifically designed to prepare students for practice in areas with limited resources. Clinical Skills training begins in the first week and continues throughout the four years, with an emphasis on patient-centered care and excellence in physical diagnosis. Hands-on training in osteopathic manipulative treatment also runs throughout the first two years. Early clinical experiences connect first- and second-year students with patients and expose them to care in a variety of settings. Optional international and domestic mission trips provide opportunities to experience caring for patients in settings of desperate need. Regardless of their choice of specialty, CUSOM graduates will be prepared to diagnose and care for patients in rural and underserved areas, which may have limited diagnostic imaging or subspecialty treatment.

#### **Third and Fourth Year Curriculum**

CUSOM provides students with a seamless transition from the classroom to clinical practice. The clinical curriculum provides training on a rotational basis at a variety of sites in North Carolina and South Carolina. Students are required to successfully complete their core clinical clerkships at affiliated sites. CUSOM students in years three and four are assigned to regional hospitals throughout North Carolina and South Carolina where they complete four-week clinical rotations within hospitals, in ambulatory practices, and in geriatric facilities. All students spend time in rural settings for an underserved care experience.

The goals of the clinical years include:

- Application of didactic knowledge to supervised clinical practice
- Development and sharpening of clinical problem-solving skills
- Expansion and development of the medical fund of knowledge
- Further development and refinement of history taking and physical examination skills
- Evaluation of oral presentations and written documentation of patient encounters
- Development of a deeper understanding of the physician's role in health care delivery
- Preparation for the Comprehensive Osteopathic Medical Licensing Examination (COMLEX) and the United States Medical Licensing Examination (USMLE) National Board Examination

- Further development of interpersonal skills and professionalism necessary to function as part of the interprofessional healthcare team

Third- and fourth-year clinical rotations, as detailed below, are designed to equip students with the skills necessary to pursue careers in primary care or medical and surgical sub-specialties.

#### Third Year Rotations

Clinical Academic Assessment	4 weeks
Simulation Medicine	4 weeks
Internal Medicine I, II	8 weeks
Medical Selective	4 weeks
Surgery	4 weeks
Obstetrics/Gynecology	4 weeks
Family Medicine	4 weeks
Pediatrics	4 weeks
Psychiatry/Behavioral Sciences	4 weeks
Rural/Underserved/International	4 weeks
Medical/Surgical Selective	4 weeks

#### Fourth Year Rotations

Residency Development	4 weeks
Medical Selective	4 weeks
Primary Care Selective	4 weeks
Surgical Selective	4 weeks
Geriatrics	4 weeks
Emergency Medicine	4 weeks
Electives I, II, III, IV, V	20 weeks

Students are required to complete a Sub-Internship (Sub I) during an elective, selective, or the Emergency Medicine rotation. Students are encouraged to choose their elective and selective rotations to afford the most comprehensive clinical experience. Students will be required to complete the fourth-year selective rotations at affiliated sites. These selectives are a mix of inpatient and outpatient experiences, and students may choose from the following list of selective rotations.

MEDICAL SELECTIVE ROTATIONS		
	<u>Third Year</u>	<u>Fourth Year</u>
Allergy and Immunology	X	X
Cardiology	X	X
Clinical Cardiac Electrophysiology		X
Critical Care/ Intensive Care Unit	X	X
Dermatology		X
Emergency Medicine	X	X
Endocrinology		X
Gastroenterology	X	X
Hematology/Oncology	X	X
Hospice and Palliative Medicine		X
Internal Medicine	X	X
Infectious Disease	X	X
Nephrology	X	X
Neurology	X	X
Preventative Medicine		X
Pulmonology	X	X
Rheumatology		X
Sleep Medicine		X

### PRIMARY CARE SELECTIVE ROTATIONS

Family Medicine
General Internal Medicine
Geriatrics
Obstetrics/Gynecology
Osteopathic Manipulative Medicine (OMM)
Pediatrics
Primary Care
Psychiatry
Sports Medicine
Urgent Care

### SURGICAL SELECTIVE ROTATIONS

	<u>2 or 4 Weeks</u>	<u>4 Weeks</u>
Anesthesiology	X	
Cardiovascular Surgery		X
Colorectal Surgery	X	
General Surgery		X
Gynecology/Oncology Surgery		X
Neurosurgery		X
Ophthalmology	X	
Oromaxillofacial Surgery	X	
Orthopedics		X
Otorhinolaryngology	X	
Plastic Surgery		

Thoracic Surgery	X	
Trauma Surgery		X
Urology		X
Urogynecology	X	
Vascular Surgery		X
		X

### **Clinical Rotation Sites & Capacity**

CUSOM has 10 regional clinical campuses throughout North Carolina with adequate capacity to meet the need for student clinical rotations.

Region 1	Lumberton
Region 2	Fayetteville
Region 3a	Raleigh
Region 3b	Harnett
Region 4	Salisbury
Region 5	Goldsboro
Region 6	Morehead City
Region 7	Smithfield
Region 8	Conway, SC
Region 9	Sanford

## **Residency Programs**

CUSOM is committed to creating sufficient residency positions for its graduates. Because physicians have a tendency to enter practice near their residency training, increasing residency opportunities within North Carolina will add to the likelihood of CUSOM graduates staying within the state permanently. In a 2012 JAMA article, Sarah Brotherton suggested that “50% of residency program graduates practice within 50 miles of where they trained.” CUSOM worked closely with the Osteopathic Medical Network of Excellence in Education (OMNEE) to facilitate the development, growth, and maintenance of graduate medical education positions for CUSOM graduates. To accomplish this, CUSOM has several important initiatives to ensure adequacy:

- Maintenance of a Graduate Medical Education (GME) Department within the medical school with an Associate Dean for Graduate Medical Education and a Director of Graduate Medical Education to assist in program development.
- Maintenance of Regional Training sites for medical students. Each region will have a Regional Associate Dean/Vice-President for Medical Education to provide academic as well as operational leadership and accountability to ensure development of quality graduate medical education programs.
- Development of agreements with key regional partners for the development of residency programs. The regional partners participating with Campbell serving as the sponsoring institution are as follows: Cape Fear Valley Medical Center-Fayetteville, NC; Harnett Health System, Lillington, NC; Sampson Regional Medical Center, Clinton, NC; Southeastern Health, Lumberton, NC; and Conway Medical Center, Conway, SC.
- Maintenance of a GME committee that brings together the resources of the school with the regional leaders in graduate medical education to create and utilize tools, such as the Graduate Medical Education Program Timeline and Responsibility List. The GMEC centralizes the governance and application of the ACGME standards from the sponsoring institution with formal participation from all programs. The committee meets monthly and has incorporated faculty development into its meeting format.
- Completion of AOA to ACGME conversion on 18 programs prior to the 2020 AOA/ACGME deadline.
- Approval as the first osteopathic medical school to receive accreditation as an ACGME Sponsoring Institution.



- Maintenance of resources to help our medical students successfully transition into residency training programs.

One of our first CUSOM community partners in developing Graduate Medical Education (GME) is Southeastern Health, a large rural healthcare organization with over 400 acute and long-term care beds, an emergency department that cares for approximately 70,000 visits annually, and 40 ambulatory offices, eight of which are defined as rural health clinics.

Southeastern Health in Lumberton, North Carolina is located in one of the most healthcare-challenged areas in the nation, with Robeson County ranking 97th out of 100 NC counties in health status of its population. Additionally, the three surrounding counties that Southeastern Health also serves are in the lowest quartile for healthcare in the state. This contributes to the wide array of patient pathology upon which the medical students, residents, and fellows are currently being trained.

In 2014, Sampson Regional Memorial Hospital successfully launched a Dermatology Program. In 2015, Sampson Regional Medical Center launched a Traditional Rotating Internship program as well as a Family Medicine program. Also in 2015, Southeastern Health successfully launched three residency programs: Emergency Medicine, Internal Medicine, and Family Medicine.

In 2016, Harnett Health launched 3 programs: Internal Medicine, Family Medicine, and a Traditional Rotating Internship. Also in 2016, Novant Health out of Huntersville, NC began taking residents into their Family Medicine program.

In 2017, Southeastern Health began its Traditional Rotating Internship program, and Cape Fear Valley launched Traditional Rotating Internship, Internal Medicine, Emergency Medicine, OB/GYN, and Surgery programs and has become the largest teaching site in the Campbell network. Cape Fear Valley reclassified with CMS as Rural in order to develop GME within their 900+ bed facilities. The site has an emergency department that cares for more than 130,000 patients annually in their primary location and are ranked as the 5<sup>th</sup> busiest system overall in the nation for their combined healthcare sites. Cape Fear Valley began a Psychiatry residency in 2017 and has received approval for a Cardiology Fellowship to begin the summer of 2020.

In 2019, Conway Medical Center in Conway, SC, obtained ACGME approval for 24 Family Medicine residents and are participating in the 2020 Match.

Campbell University is an NCAA Division I institution with multiple athletic programs. CUSOM accepted its first sports medicine fellow in 2014 and expanded to 2 fellows in 2016. CUSOM has received approval for a Neuromusculoskeletal Medicine / Osteopathic Manipulative Medicine (NMM/OMM) residency program and we accepted our first resident in 2018.

GME Location	GME Program	Approved	Filled
Sampson	Dermatology	6	6
SE Health	Emergency Medicine	24	20
Cape Fear Valley	Emergency Medicine	32	22
SE Health	Family Medicine	24	24
Harnett Health	Family Medicine	12	8
Sampson	Family Medicine	12	12
Campbell	Sports Medicine	3	2
SE Health	Internal Medicine	39	39
Cape Fear Valley	Internal Medicine	45	36
Harnett Health	Internal Medicine	24	25
Cape Fear Valley	Cardiovascular Disease	9	0
Campbell	ONMM		1
Cape Fear Valley	Psychiatry	16	7
Cape Fear Valley	Transitional Year	13	11
Cape Fear Valley	Surgery	15	11
Harnett Health	Transitional Year	13	8
SE Health	Transitional Year	13	0
Sampson	Transitional Year	4	4

Campbell University is committed to advancement of Scholarly activity among the faculty and residents in our programs. In February 2018, Campbell University held the first annual Resident Research and Educational Symposium. This was a regional event, and demonstrated Patient Safety, Quality Improvement, and original research with over 70 project entries representing more than 150 of the faculty and residents. 2020 brought the 3<sup>rd</sup> annual Resident

Research and Education Symposium with 118 posters, 39 judges and greater than 200 faculty and residents represented overall. The Symposium encourages use of evidence-based medicine in a manner that reflects quality and care parameters to improve patient care in our system.

## **Research**

Research is fundamental to, and a prerequisite for, excellence in teaching and the creation of a scholarly atmosphere for learning. CUSOM recognizes the critical role for developing its research capacity in order to continue to attract and retain top-tier faculty and students, thereby training students for productive careers in osteopathic medicine, biomedical research, and in making valuable contributions to society.

Students have been involved in scholarly activity, and CUSOM has received multiple accolades since the submission of the last report.

- CUSOM students and faculty have access to over 10,000 square feet of research space in which to work among Levine Hall, Smith Hall, and main campus.
- The Smith Hall research space is a fully equipped laboratory able to accommodate multiple researchers in various areas of biomedical research, including biochemistry, microbiology, cell biology, immunology, pharmacology, physiology, etc.
  - Core facilities include fluorescence microscopy, tissue culture facilities, fume hoods, autoclave, confocal microscopy, and flow cytometer.
  - A vivarium for small animals is located on main campus.
- CUSOM has received over \$1.5 million of NIH and regional research funding.
- Other funded healthcare initiatives for CUSOM include:
  - Health Resources and Services Administration (HRSA) Primary Care Training and Enhancement Grant of \$331,477 (first year) to train Primary Care Physicians. Funding for the full 5-year project will total \$1.78 million.
  - Campbell University Care Clinic receives up to \$80,000 per year from the NC Department of Health and Human Services to provide care for community patients in the student run free clinic.

Student research is especially active in the summer. CUSOM has established a robust summer scholars program that provides research experiences to select rising second year students. These

students receive a stipend and participate in research professional development during the summer. The program began in summer 2017 with nine students doing basic science research. The program has expanded to include biomedical, clinical and simulation medicine research projects. Some of the more recent projects include:

- “Transthoracic Truncal Vagotomy Outcomes in Gastric Bypass Patients with Marginal Ulcers”
- “Two Tiered Trauma Triage Criteria for Peds and OB”
- “Brain vs. Bone: Does fracture fixation technique influence outcomes in patients with traumatic brain injury (TBI)?”
- “Analysis of the presence of anti tNASP antibody in the serum of patients with documented different types of gastrointestinal cancers (pancreas, liver, colon, stomach)”
- “What are the independent effects of body mass on the performance of the Achilles tendon?”
- “Phthalate exposures early in life: Risk factor for premature Leydig cell aging”
- “A Mixed Methods Approach: Examining Attitude and Communication”
- “Interdisciplinary IPASS Patient Handoff Training among Pre-Clinical Health Care Students”

## 4. Evaluation / Survey Data

As the mission of CUSOM includes training physicians to care for rural and underserved populations in North Carolina and beyond, our desired outcomes include:

- Increased numbers of graduates practicing in primary care or other needed specialties such as general surgery in target areas
- Increased numbers of graduates practicing in areas of need
- Increased numbers of graduates remaining in North Carolina
- Increased numbers of students and graduates choosing to participate in medical missions
- Improved physician supply and health care access in North Carolina
- Improved health status measures for North Carolina

CUSOM has a comprehensive assessment plan, which consists of multiple measures to ensure that standards and overall outcomes related to the mission and vision of the institution are met. CUSOM requires that students complete and pass COMLEX-USA Level 1, Level 2-CE, and Level 2-PE to graduate and obtain the DO degree. Outcomes from these licensing exams, as well as USMLE Step 1 and Step 2CK, are currently available on the Campbell University website, which can be accessed by clicking [here](#). We have now graduated three classes of CUSOM DO students (Classes of 2017, 2018, and 2019) and are currently in the process of tracking residency placements in the single-accreditation, NRMP Match 2020.

Of the eligible Match participants from the Classes of 2017, 2018, and 2019, nearly all of students (100%, 99.7%, 100% respectively), were successful in obtaining a [residency placement](#). Of the most recent graduating class, CUSOM DO 2019, sixty-five percent (65%) went into a primary care residency (Internal Medicine, Family Medicine, Pediatrics, Ob/Gyn), which, for CUSOM, is trending higher than the previous two-years, and is currently the largest percentage of a CUSOM class pursuing primary care specialties. Eighty-two percent (82%), up from seventy-four percent (74%), entered into a residency program of one of our target specialties, which includes Internal Medicine, Family Medicine, Emergency Medicine, Pediatrics, General Surgery, Psychiatry, and Ob/Gyn. Thirty-seven (37) students, nearly one-quarter of the 2019 graduating class, matched into residency programs in North Carolina, while eighty-six (86) students, or roughly fifty-seven percent (57%) of CUSOM graduates, matched into residency programs in the target region of the Southeast United States.

Items most related to measuring success in establishing primary care physicians will be tracked via graduation surveys and final surveys of career goals. These assessment tools will measure the extent to which the CUSOM curriculum is successfully achieving its desired learning outcomes and preparing graduates for GME. Longer-term measurements will be needed to assess CUSOM's success in positively impacting healthcare access and quality in North Carolina. These results will be shared with various institutional committees as well as with appropriate accrediting bodies as required, such as the Commission on Osteopathic College Accreditation (COCA) and the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), as well as with local and state agencies like the NC AHEC.

## 5. Faculty Development

### Site-based programs

CUSOM has maintained a program of site-based faculty development on its clinical campuses since early 2015. An annual needs assessment survey of all off-campus faculty provides data on self-identified preceptor needs for training by region. The Associate Dean for Faculty Development and Medical Education works with leadership at each of the regional sites to identify desired programs and schedule them at times convenient to the local faculty.

A collection of online resources on clinical education (<http://www.teachingphysician.org/>) has also been made available to all CUSOM faculty, both on- and off-campus. Password-protected online systems provide additional tools and resources specific to CUSOM clerkships, students, and residents. Clinicians holding CUSOM faculty appointments also are eligible to receive (upon request) access to a wide range of resources through the Campbell University Libraries.

### On-campus workshops

CUSOM collaborates with the Campbell University College of Pharmacy and Health Sciences (CPHS) to host campus-based weekend programs, to bring clinical faculty together to learn more about teaching in clinical settings. The annual Clinical Teaching Conference now incorporates physician, PA, Pharmacy, and Nursing faculty working with residents and/or students in community-based sites. Conference topics are selected based on input and requests from the community-based faculty. In 2019, small-group concurrent sessions included discussions and skill-building activities on such topics as:

- The One Minute Preceptor
- Giving and Receiving feedback
- Dealing with Challenging Learner Situations
- Supervising Osteopathic Manipulative Treatment
- Building a Team of Interprofessional Learners
- Fitting Teaching into a Busy Practice
- Responding to Students in Distress
- Evaluating learner performance

A hands-on lab experience enabled MD faculty to experience and attempt manipulative techniques in order to improve their understanding and ability to supervise DO medical students and residents. Additional CME sessions addressed the Federal Educational Rights and Privacy Act, as well as workplace safety in the face of rising concerns about gun violence.

## **Primary Care Champions Fellowship**

With grant support from the Federal Health Resources and Services Administration, CUSOM has established a Primary Care Champions Fellowship program, designed to prepare community-based primary care physicians and PAs as leaders in healthcare transformation and education. This program enables them to lead innovation, enhance their practices, improve population health, and increase capacity for community-based training of health professionals. Established in 2019, this program just matriculated its second cohort of fellows in January 2020. Each fellow completes a series of courses, as well as a year-long Practice Transformation Project. Federal funding provides a stipend to enable release from clinical responsibilities for four-hours per week to complete the program. Examples of fellows' projects include:

- Implementation of an electronic patient portal in a rural Internal Medicine practice
- Establishment of a Teen Clinic in a rural county Health Department
- Implementation of universal screening for social determinants of health in a rural Internal Medicine practice
- Use of social media to improve vaccination rates
- Development of a systematic onboarding process for Advanced Practice Providers in a Federally Qualified Health Center
- Screening and intervention for Adverse Childhood Events

Involved practices currently are located in Harnett, Cumberland, Wayne, Robeson, Franklin, and Wake counties. Work is in progress to convert the current seated classes to a blended online format, to enable participation of clinicians from a broader geographic area. The distance-based program will be implemented for the 2021 cohort of fellows. Interested fellows may opt to continue for a second year, to obtain a Master of Health Professions Education degree.

## **Master of Health Professions Education**

An extension of the one-year fellowship curriculum is the newly approved, two-year Master of Health Professions Education program. This new degree is the first of its kind in North Carolina; it has been approved by SACSCOC and officially began in January of 2020. Three of the first six Primary Care Champions fellows have opted to continue to the MHPE program. Designed to provide additional preparation for educational leadership, this program will enable graduates to further develop rural-based health professions training programs and serve as leaders in training the next generation of health professionals.

## 6. Summary

In its seventh year, CUSOM has implemented initiatives that will address needs for primary care in the rural and underserved areas of North Carolina and the Southeastern United States. The admissions process and entire four-year curriculum have been strategically designed to provide a foundation for skilled clinical practice and dedication to service. Residency programs are continuing development along with fellowship positions in primary care with the hopes that our students who were born and raised in rural and underserved areas will stay in North Carolina to establish their own practices. We look forward to further establishing and continuing relationships with local hospitals and agencies so our students will demonstrate measureable competencies and graduate ready for practice within the ever-changing climate of 21<sup>st</sup> century healthcare in the United States.



# Schools of Medicine and AHEC Family Practice Residencies

Update: Primary Care Education Plan  
**Duke University School of Medicine**

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

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February 20, 2020

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

2020 Update: Primary Care Education Plan  
Duke University School of Medicine

The Duke University School of Medicine respectfully submits our educational plan with the goal of encouraging students to enter the primary care disciplines of general internal medicine, general pediatrics, family medicine, and obstetrics/gynecology. These efforts continue to receive both internal and external (grant) support to achieve our goals through focus on our students, our school and community faculty, and our community health and well-being.

Duke School of Medicine is committed to maintaining a strong relationship with the Durham community to promote health and wellness. This commitment sets the stage for our learners to both appreciate and experience the impact a Duke-Durham partnership can have on the health of the public.

The Generalist Activities include:

1. Improving Community Relations to address disparities in health care

Duke's modern history with community engagement began in 1996, when leadership and faculty of the Duke Department Family Medicine and Community Health and the School of Nursing worked with the leadership of Durham County's Health and Social Services Departments, the local federally qualified health center (FQHC), and its then-rival hospital, Durham Regional Hospital, to initiate a series of discussions about improving the health of Durham's low-income populations.

In 1998 CFM created the Division of Community Health (DCH) to work with communities in Durham and across North Carolina to build innovative inter-professional models of care to improve health at the individual and at the population level. The models of care utilized multidisciplinary teams of social service (MSWs, LCSWs, family counselors and psychologists) and health care providers (Medical doctors, Pharm Ds, RDs, PAs, NPs, OTs and PTs) along with non-licensed community health workers; and placed primary care and care management services in accessible locations for individuals and families - in their homes, in schools, and in neighborhoods. Examples of DCH's varied programs include:

Three neighborhood clinics planned with their communities in partnership with Durham's FQHC (Lincoln Community Health Center), seeing over 15,000 patient encounters annually. 72% of the patients served are uninsured.

- The Just for Us Program is a multi-agency, inter-professional team providing in-home primary care, nutrition, occupational therapy, and case management to elderly and/or disabled residents of Durham living in 13 public/subsidized housing centers in Durham County, planned with the senior centers and the seniors. The program provides more than 1,000 patient visits annually.
- A school-based wellness center located in Southern High School, planned with Durham Public Schools and the community, generates over 1,500 encounters per year. The Division also collaborates with the Durham County Health Department to provide well child visits and immunizations in five Durham elementary schools.
- Local Access to Coordinated Health Care (LATCH) a care management program that draws on the resources of multiple agencies including the County Departments of Health and Social Services and Lincoln Community Health Center that has served more than 22,000 uninsured Durham residents since its inception.
- Healthy Futures is a new, innovative care delivery model provided by the Durham County Department of Public Health, in partnership with Durham Public Schools and Duke Health for children residing in Durham County. Some of the services provided by the program include immunizations, school physicals,

health checks, and visual/hearing screenings. Healthy Futures enhanced role nurses also provide nutrition, health and safety counseling; and family referrals are made to their medical home and other agencies for additional support with dental and mental health concerns.

- The Durham Crisis Collaborative is a group of agencies working together to improve the care for people with complex behavioral health needs. The Collaborative plans and provides services based on patients' needs, connecting them with the best resources available to assist in improving the quality of care, reducing unnecessary services, and reducing visits to the ED. The Collaborative is comprised of multiple community agencies including Alliance Behavioral Health, City of Durham, Duke University Health System, Project Access of Durham County, Durham Police Crisis Intervention Team, Central Regional Hospital, Freedom House Recovery Center, Housing for New Hope, and Lincoln Community Health Center. In addition, various Durham County agencies are also involved, including the Criminal Justice Resource Center, Department of Public Health, Department of Social Services, and Emergency Medical Services.

Benefits enrollment counseling (BEC). In FY 16 the division of community health launched the benefits enrollment counseling program (BEC) with grant funding through the national council on aging to help seniors and those with disabilities and a limited income, find and enroll in all the benefits programs for which they are eligible. The goal of the service is to enable older adults to enjoy life and live independently in their homes and communities for as long as possible. For those with limited income and resources, additional support can be critical in maintaining their health and avoiding costly hospitalizations. The benefits provide clients served with access to healthy food, needed medical care and prescriptions, as well as other supportive services. The benefits also provide a community economic stimulus, as benefits are spent locally in pharmacies, grocery stores, utility companies, and health care providers. To increase the reach of the program beyond grant funding, BEC staff train volunteers (from partner community based organizations and Duke) to assist clients in Durham, Granville and Person counties. Last year, BEC screened 1,340 individuals. 1,199 of those individuals were eligible to receive assistance from BEC to find and apply to supportive benefits programs. BEC assisted these individuals in completing 4,773 benefit applications.

- The Chronic Pain Initiative was developed to address accidental overdoses and improve clinicians' safe prescribing of opioids. The Initiative includes distribution of Naloxone in pharmacies, and public education of the merits of Naloxone. Duke University Health System launched a Safe Opioid Prescribing Task Force as part of its PNT Committee. This Task Force is currently disseminating to providers new regimens related to prescribing of opioids in line with the State Medical Board and the CDC guidelines.

- SSI/SSDI Outreach, Access, and Recovery (SOAR) is a program designed to increase access to SSI/SSDI for eligible adults who are experiencing or at risk of homelessness and have a mental illness, medical impairment, and/or a co-occurring substance use disorder. Duke Health has two SOAR workers and over the past three years have qualified 122 Durham residents for eligible services and SSI income.

In addition, the Division operates the Northern Piedmont Community Care Network (NPCC), part of the Community Care Program of North Carolina. NPCC provides care management services for more than 70,000 Medicaid enrollees across Durham, Franklin, Granville, Person, Vance and Warren counties. The

NPCC network links and coordinates services for 53 primary care practices, five hospitals, and local departments of social services, health and mental health across the six-county region.

All of these programs began with our strategy for community engagement. Together, with our partners, we ask about and listen to concerns (literally going door to door in neighborhoods), analyze and share healthcare utilization and costs, explore barriers to care, identify partner needs and resources, plan/redesign services, track outcomes, and share accountability. Our evaluation data demonstrated that these programs have been improving hospitalization rates and emergency department use, and fulfilling unmet patient needs for meaningful access to primary care, and support in managing their own health.

The Learning Together program is a service-learning program within the Duke Department of Family Medicine and Community Health, the Division of Community Health. This program provides training and opportunities for Duke learners (Duke residents, medical, physician assistant, nursing, graduate, and undergraduate students including Duke program fellows and interns) to participate in non-clinical, health-related educational community service activities. When an invitation is received, opportunities for service may involve teaching health education sessions to Durham Public School System children in pre-school through high school (ages 4 through 18) and at sites throughout the Durham community. Learners volunteer as guest speakers under the Learning Together program umbrella. Each year, about 300-350 Duke learners serve approximately 400 adults and 1,224 children/youth through the Learning Together program.

## 2. Development of primary care faculty

A large group of primary care faculty serve on the Medical School's Curriculum, Admissions, and Promotions Committees as well as representation on both Graduate Medical Education and Continuing Medical Education Committees. The network of primary care practices added to Duke is now playing a strong role teaching medical and PA students. NCAHEC ORPCE teaching sites have recently played a smaller role in primary care teaching as the competition for primary care teaching sites has increased with more learners in NC. The Department of Family Medicine and Community Health, through funding from HRSA, is home to our Duke Primary Care Transformation Fellowship. The Department also is organizing several faculty development opportunities.

The SOM supports the development of primary care teaching faculty in many ways, including a biannual half day teaching retreat supported by DPC administration, ongoing monthly review sessions on topics relevant to primary care, led by expert faculty, and a monthly newsletter that includes an original article written about a topic or challenge that is commonly voiced or shared by providers who teach in the outpatient setting. All interested providers who are especially interested in teaching and education receive once monthly list of high quality teaching articles intended to strengthen and expand skill sets of the teaching faculty. Our faculty champion visits preceptors in their clinic to offer best methods for teaching in outpatient setting, and to answer questions and address challenges. Preceptors can join a newly created Primary Care Teaching Academy to both recognize their contributions and receive additional teaching support.

### 3. Development of Research Programs in Primary Care

Research efforts in primary care have continued in the areas of treatment of common illness, health outcomes, general health status, and health services delivery. Such research is being carried out in the Health Services Research Program at the Veteran's Administration Medical Center, the Epidemiology Program in the Department of Psychiatry and the Aging Center, the Clinical Epidemiology and Biostatistics Program, and the Department of Family Medicine and Community Health (in Divisions of Community health and Family Medicine and recently also in the Physician Assistant Division). The Health Promotion and Disease Prevention Center at the Veteran's Administration Medical Center is active in the medical school curriculum. Many students participate in primary care research in their third year at Duke through the combined MD/MPH program, the Epidemiology, Health Service and Health Policy Study Program, the Global Health Track and the Masters of Health Science in Clinical Research degree, and the Duke Center for Community Health Improvement. There are also numerous primary care research activities in the Global Health Institute, and the new Department of Population Health Sciences also promises to be a fertile ground for primary care research projects and training.

### 4. Admissions and Premedical Preparation

Duke is proud to be a site of the AAMC's Robert Wood Johnson-funded Summer Medical Enrichment Program. This program sponsors college sophomores and juniors from disadvantaged backgrounds to attend a six-week program introducing them to a variety of programs associated with health professions. This introduction includes experiences related to primary care fields as well as shadowing programs.

### 5. Financial Aid

The Primary Care Leadership Track had until this year, awarded students up to \$40,000 to replace need-based loans taken out by the student in the fourth year of medical school. The funds were awarded once the students match in one of the approved Primary Care fields. Students will be tracked for five years post-graduation. The money for the scholarships is not available at this time.

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

### 6. Medical School Curriculum

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

students. All third or fourth year students are required to have a longitudinal ambulatory care experience. Ambulatory experiences are included as part of several core clerkships.

**B. Primary Care Leadership Track** The Primary Care Leadership Track (PCLT) launched in 2011, is a four-year program to prepare physicians with knowledge of the health care system, understanding of longitudinal chronic illness care, and skills to work effectively in primary care teams to care for patients and improve systems of care. To date 66 students have matriculated into the program. These students will enter residency prepared to engage with communities and practices to help improve health outcomes. The curriculum of the PCLT builds on a longstanding partnership between Duke and the Durham community to understand the causes of health disparities, create a strong research focus on community engagement, and redesign clinical programs to improve health outcomes. Students committed to primary care are specifically recruited and participate in an innovative 4-year curriculum designed to support their interest and develop skills needed for community-engaged, population-based practice, and leadership positions. As of May, 2020, there will be 38 graduates of the program. All but 2 have entered residencies that could lead to a career in primary care.

## 7. Extracurricular Activities

**A. Primary Care Progress Chapter** Duke has had a local chapter of Primary Care Progress. Primary Care Progress is a growing network of medical providers, health professional trainees, policy pundits, advocates, and educators united by a new vision for revitalizing the primary care workforce. The group works through strategic local advocacy that promotes primary care and transforms care delivery and training in academic settings. Duke and UNC chapters have collaborated on local activities.

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

## 8. Physician Assistant Program

The Duke PA program is ranked #1 in the nation according to the 2019 US News and World Report. The program offers longitudinal primary care rotations in several rural/underserved areas of NC, and provide a special scholarship which is attached to a longitudinal primary care rotation in Mitchell Co. All students in the program complete 8-weeks of clinical training in primary care and internal medicine, and 4-weeks of training in the primary care specialties of general pediatrics and women's health. Training primary care PAs is part of the mission statement of the program, and this is reflected in the admission and recruitment process. The PA Program graduates continue to seek employment in primary care settings. Of the 81 students who have secured employment from the most recent graduating class, 32% work in a primary care setting, and 42% of that group provide primary care in North Carolina.

## 9. Primary Care Residency Training

Duke continues to have five residency tracks that can lead to the practice of primary care: general internal medicine, general pediatrics, a combined medicine/pediatrics residency, family medicine, and obstetrics/gynecology.

### A. Family Medicine Residency Program

The Duke Family Medicine Residency program is known for its innovative approach to training in population health and community health. Again ranked in the top 10 in 2019, according to US News and World Report, the program is dedicated to training family physicians who are excellent clinicians, leaders and advocates of health care within the community.

In addition to receiving high-quality clinical training in all aspects of Family Medicine, residents engage in a dynamic, immersive experience designed to instill advanced skills of population health and community engagement. The experience centers on a longitudinal population health curriculum that spans all three years of residency and includes a two-year faculty-guided, community-engaged scholarly project. Projects seek to address healthcare disparities, improve health, and mobilize community resources in a variety of innovative, community stakeholder-aligned ways, and residents are required to develop scholarship that will disseminate the projects and their outcomes.

In addition to the population health curriculum, the residency program incorporates community-engaged approaches for population health improvement and leadership training in other ways. It partners with a variety of local health care and community teams to meet the needs of individuals, families, and populations, with the core goal of reducing health care disparities and improving health. For example, all residents provide continuous primary care to 1) patients in the Duke Family Medicine Center through the three years of residency training and 2) to patients seeking care in community-based clinics address the care of underserved populations. Additionally, PGY2 and PGY3 resident spends one half day to one day per week working in one of the following clinics: Lincoln Community Health Center, the Walltown, Lyon Park, and Holton Neighborhood Clinics, El Futuro (a mental health agency caring for Latino families), and the Veterans Administration PRIME (primary care) clinic. Additionally, three residents meet this community clinic requirement by providing care for patients in local Duke Primary Care Clinics, including DPC Oxford, a rural community-based clinic. Residents also rotate through the Just-For-Us program—which offers in-home medical services to Durham's seniors and adults with disabilities living in Durham's public subsidized housing facilities—and TROSA, a comprehensive, long-term, residential substance abuse recovery program. Besides clinical training in all aspects of Family Medicine, residents complete a three-year Population Health Improvement through Teamwork (PHIT) Curriculum, and they apply what they learn in PHIT in their clinical practice on a daily basis.

The Family Medicine residency program expanded its size in 2015 from 4 residents per year to 5 residents per year through the support for Graduate Medical Education (GME) Enhancement under Veterans Access, Choice, and Accountability Act (VACAA). In 2016, it further expanded to 6 residents per year with additional funding from Duke Primary Care, and Duke Family Medicine. The Department will enroll an additional 2 residents in 2021, with the creation of a Duke Family Medicine rural track. These two additional residents per year will spend one year with the program in Durham followed by two years in a rural track centered in Granville and Vance counties, in collaboration with Duke Primary Care and Maria Parham Health in Henderson, NC. . The program was also recently awarded R38 funding from NIH to offer research tracks during residency.

Total number of residents and their ethnicity:

- Four in Class of 2016: All US graduates. Three White, non-Hispanic. One Black, Afro Caribbean.
- Four in Class of 2017: All US graduates. 1 Hispanic White, 1 Asian, 2 White non-Hispanic.
- Six in Class of 2018: All 6 US graduates. 2 Hispanic White, 1 Black, 1 Egyptian-American, 2 White non-Hispanic.
- Five in Class of 2019: All 5 US graduates. 1 Hispanic Afro Latina. One is Asian and Hispanic, 2 Asian. 1 White.
- Five in Class of 2020: All US graduates. 1 African, Three Asian. 1 white
- Seven in class of 2021. All are US graduates. 1 African American Hispanic. Five White non-Hispanic. 1 Asian.
- Six in class of 2022 All are US graduates. Two White, non-Hispanic. Two Hispanic white. Two Asian.

The outcomes of the residents with graduation between July 1, 2015 to June 30, 2020: in what state are they practicing?

Class of 2016 (Four graduates):

- Three practicing in North Carolina serving underserved populations. One at Lincoln Community Health Center, and one at Piedmont Health Services' Program of All-Inclusive Care for the Elderly (PACE). One is an Extensivist Physician at CareMore Raleigh, addressing needs of Medicaid population with high complexity.
- One is practicing in her home country of Trinidad and Tobago serving an underserved population.

Class of 2017 (four graduates)

- Three are practicing in North Carolina: One at Lincoln Community Health Center addressing the needs of underserved populations, one at Duke University with a mix population of patients served, and one at a private practice in Greensboro.
- One is in Los Angeles with a mix population of patients served with Kaiser Permanente.

Class of 2018 (seven graduates)

- Two practicing in NY with One Medical
- Two practicing in California. (One with Kaiser, one with Google)
- One in South Carolina. Direct Primary Care
- One in DC, FQHC.

Class of 2019 (Five graduates)

- Three practicing in North Carolina (One at DPC rural site, one at UNC, one in Raleigh, private group)
- One in California doing an OB fellowship.
- One in Illinois, Assistant Program Director at new FM residency program

Class of 2020 (Five graduates\_

- Three signing contracts with Duke Primary Care to work in North Carolina
- One going to a Sports Medicine fellowship in NY.
- One unknown.



For the last 5 years, 50 % of our Family Medicine graduates have stayed in North Carolina after graduation (most of them came from other states and stayed).

In short, the program utilizes an innovative population health program—combined with well-rounded clinical training—to produce clinically skilled Family Medicine physicians who can lead and collaborate with clinical teams to meet the health care needs of patients and populations.

#### B. Ambulatory Care Resident Leadership Track

The Ambulatory Care Leadership Track (ACLT) has been a core part of the Internal Medicine residency program at Duke since 2012. The ACLT is an elective track for second and third year internal medicine residents which serves as a foundation for careers in general medicine leadership, primary care, academic ambulatory subspecialties, research, or education. Residents come together during three ambulatory blocks per year of clinical and didactic small group instruction, including: (1) Expanded clinical options in fields inside and outside of medicine, including primary care, sports medicine, ENT, ophthalmology, dermatology, obesity medicine, as well as all medicine subspecialties; (2) Curricula in teaching and opportunities to teach as a senior resident; (3) Training in population health and practice management; (4) Advocacy and health policy seminars given by faculty in government relations and health policy throughout the year, and an advocacy trip in the spring to both Washington DC and Raleigh, NC, alternating years. The ACLT has evolved significantly since its inception, in response to learner feedback. This is a learner driven experience and a wonderful opportunity to realize house staff's personal impact on the worlds of clinical medicine, education, leadership, and health policy. The ACLT is directed by Dr. Daniella Zipkin with support from Dr. Sharon Rubin and Dr. Alex Cho.

#### 10. Community Practitioner Support

Duke continues to work closely with the other three medical schools in North Carolina and the North Carolina Area Health Education Centers Program (AHEC). Duke continues to coordinate placement of its community learners with practitioners throughout the state with assistance from the Office of Regional Primary Care Education (ORPCE). Duke supports key community practices with teaching resources whenever possible.

#### 11. Tracking Students and Residents

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

12. “Playbook” to Integrate Primary Care and Public Health The Department of Family Medicine and Community Health continues to be the lead organizer of a multi-pronged seven-year national effort to encourage, initiate, and support public health and primary care to partner and work together with communities to address multiple determinants of health and improve health outcomes. Funded by the de Beaumont Foundation, in partnership with the Centers for Disease Control and Prevention and HRSA, and assisted by a wide array of national primary care and public health agencies and groups, the Department serves as the home for the Practical Playbook (PPB), which provides tools and resources for communities as well as practitioners and educators in public health and primary care who want to

implement practical strategies to improve population health outcomes. The PPB has also coordinated and provided technical support for collaborative stakeholders in communities selected by the BUILD Health Challenge, evaluating and disseminating best practices from across the nation for what works and how partners can work together. The Playbook has become the core of a national movement of multisector partnerships working to improve population health, with over 1000 identified partnerships nationally, and over 80,000 users and over 400,000 hits to the programs at [www.practicalplaybook.org](http://www.practicalplaybook.org). A textbook version was requested by Oxford Press, with close to 4000 copies subsequently distributed, and an expanded second version focused on practical tools, including a section on training, released in May 2019. The second version has proven even more successful than the first, with over 4000 copies distributed already, as well as several thousand hits to free access to the content on the Playbook website. Most telling, the Playbook is being incorporated into courses and training in schools of medicine, nursing and public health; in residency training programs in Family Medicine, Pediatrics, and Med-Peds; in county and state health improvement efforts across the country; and at the CDC and within HRSA.

### 13. The Duke-Johnson & Johnson Nurse Leadership Program

This program, national in scope, provides advanced practice nurses (APN) - specifically nurse practitioners, certified nurse midwives and clinical nurse specialists - and their health care team members with a year-long transformational leadership development experience to prepare them to implement change in their practice settings and within the evolving and challenging health care environment. The mission of the program is to prepare APNs and their interprofessional teams to transform their practices and create improved health within their communities. Using a team-based training model that focuses on building team leadership and management capacity, the program includes onsite leadership retreats, distance-based learning sessions, individualized executive coaching, leadership salon discussions, and team mentoring to develop and implement a transformational health improvement project. The program offers innovative and integrated training in the areas of leadership, management, organizational development, business acumen, community engagement and population health. The program especially is interested in supporting APN-led health care teams practicing in community-based settings and serving vulnerable populations. With a focus on the creation and sustainability of patient-centered and integrated/comprehensive models of care, the program emphasizes the behaviors of exemplary leaders to enable APNs and their teams to be change agents for their patients, organizations and communities.

**Summary** Duke continues to be recognized by US World and News Report for training family medicine residents. These rankings recognize the efforts Duke has made in the past two decades to improve training in the primary care specialties. The Primary Care Leadership Track continues to thrive at the medical school, attracting top students from around the country. The Ambulatory Medicine Resident Leadership Track continues to increase the number and skills of medicine residents in ambulatory primary care. The Family Medicine residency is ensuring its graduates have skills that will allow them to be leaders in community health improvement after graduation. Duke is training nurse leaders through the Johnson and Johnson Nurse Leadership program. With the Practical Playbook, Duke is leading a multi-pronged national effort to encourage, initiate, and support public health and primary care to partner and work together to address multiple determinants of health and improve health outcomes.

Lessons from the Playbook are taught to residents and students. Duke continues to be active in research areas that impact the health of communities. Duke is more than ever committed to innovations in primary care service, research, and education to meet the health care needs of the public through primary care.

Report to the Board of Governors  
University of North Carolina System  
2020 Update:

*Primary Care Medical Education Plan*

**Brody School of Medicine at East Carolina University**

*Submitted by:*

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Mark Stacy, MD,  
Dean, Brody School of Medicine

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

The Brody School of Medicine at East Carolina University (ECU) has been impacting change in the region since its inception. Admitting its first class of students in 1977, Brody has remained true to the legislatively mandated mission of increasing the supply of primary care physicians serving the state, enhancing the access of minority and disadvantaged students in obtaining a medical education and improving the health status of citizens in eastern North Carolina. Strengths of Brody are not only in the mission of the medical school, but also in that our learners are *from* the communities of North Carolina *for* the communities of North Carolina as we only admit medical school applicants from within the state.

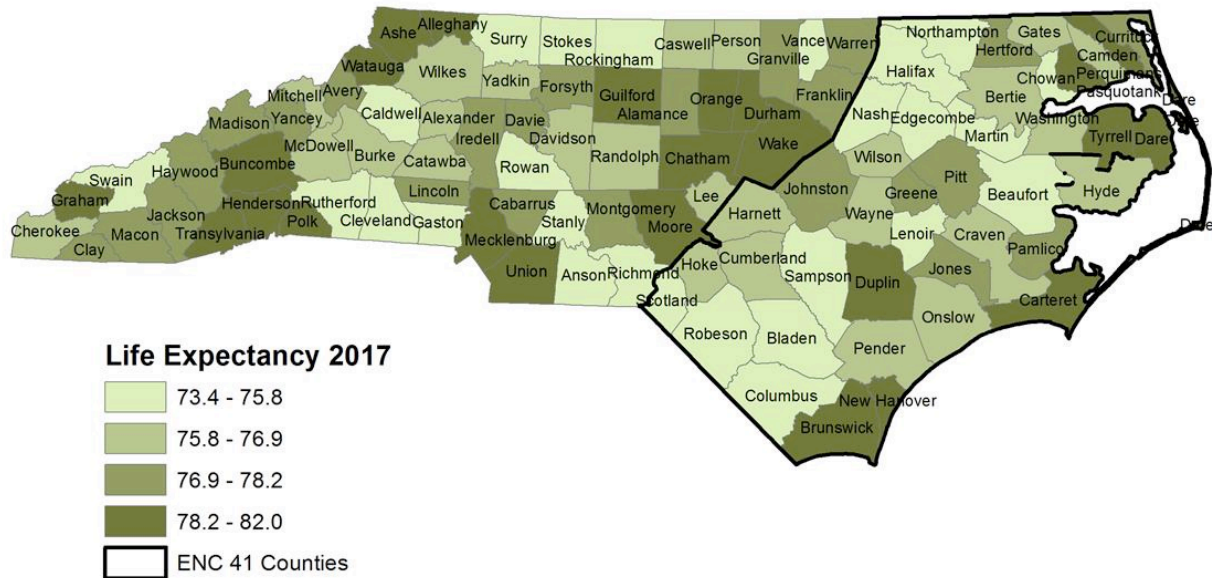
Brody has contributed to improving the health of the citizens of the state by providing a primary care focused education to medical students, focusing on outreach and recruitment efforts to those students who are disadvantaged or underrepresented in medicine and working with our teaching hospital to provide clinical care to some of the sickest and medically complex patients in the state. Our presence is making a difference. Data from the North Carolina Department of Health and Human Services on life expectancy indicate that in 1990 the eastern region of the state had the worst health in the state. Using the same criteria for a 2017 analysis indicate an improvement of life expectancy to mirror that in other areas of the state. See figures 1 and 2. The average percent change in life expectancy between 1990 and 2017 was 3.1% with an on average eastern North Carolina life expectancy increase of 4.2% and no counties experiencing a decrease.

**Life Expectancy 1990**

- 70.8 - 73.1
- 73.1 - 75.1
- 75.1 - 75.9
- 75.9 - 79.3

ENC 41 Counties

Figure 2: Life expectancy data for North Carolina (2017)



We continue to provide physicians for the state of North Carolina. According to the UNC Sheps Center for Health Services Research, in the last five years, more than 50% of Brody graduates are practicing in North Carolina five years after graduation. Data collected annually by the Association of American Medical Colleges (AAMC) show that Brody is a national leader (above the 90<sup>th</sup> percentile for all US medical schools) in producing a more diverse pool of graduates who practice in rural and underserved areas, and who practice primary care. See Table 1. Brody creates an educational product that gives graduates a debt load that is \$54,000 less than their peer average nationally.

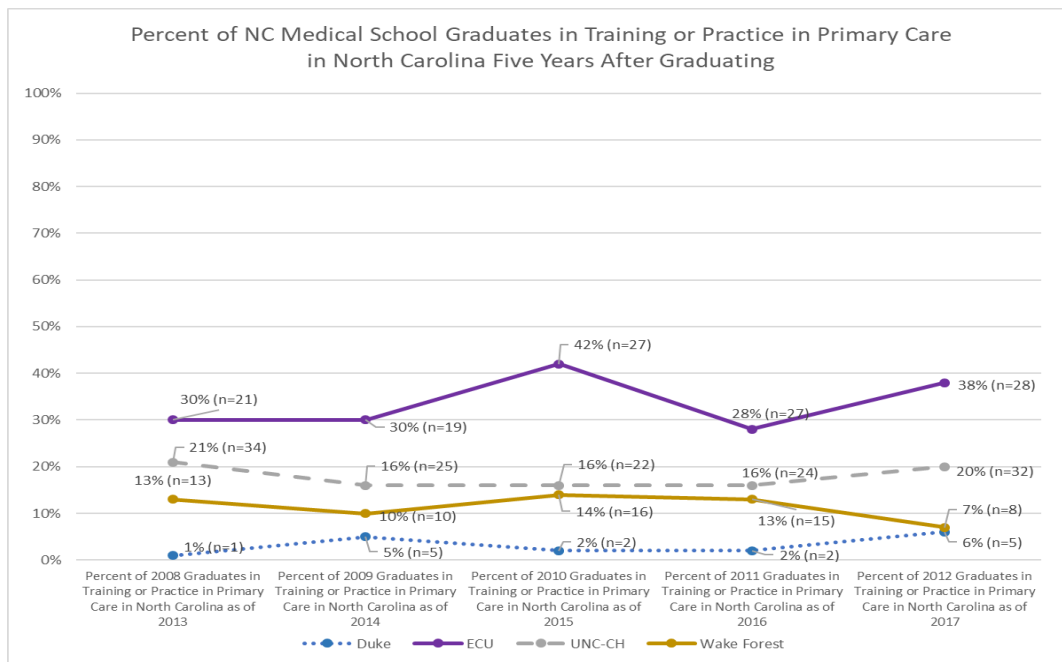
Table 1:

2019 Graduating Class Ranking (Percentile among all US Medical Schools)	
Percentage practicing in rural areas	94 <sup>th</sup> percentile
Percentage practicing in underserved areas	96 <sup>th</sup> percentile
Percentage practicing primary care	98 <sup>th</sup> percentile
Percentage practicing family medicine	98 <sup>th</sup> percentile
Percentage who are African American	95 <sup>th</sup> percentile
Percentage who are Native American	94 <sup>th</sup> percentile

Source: 2019 AAMC Mission Management Tool

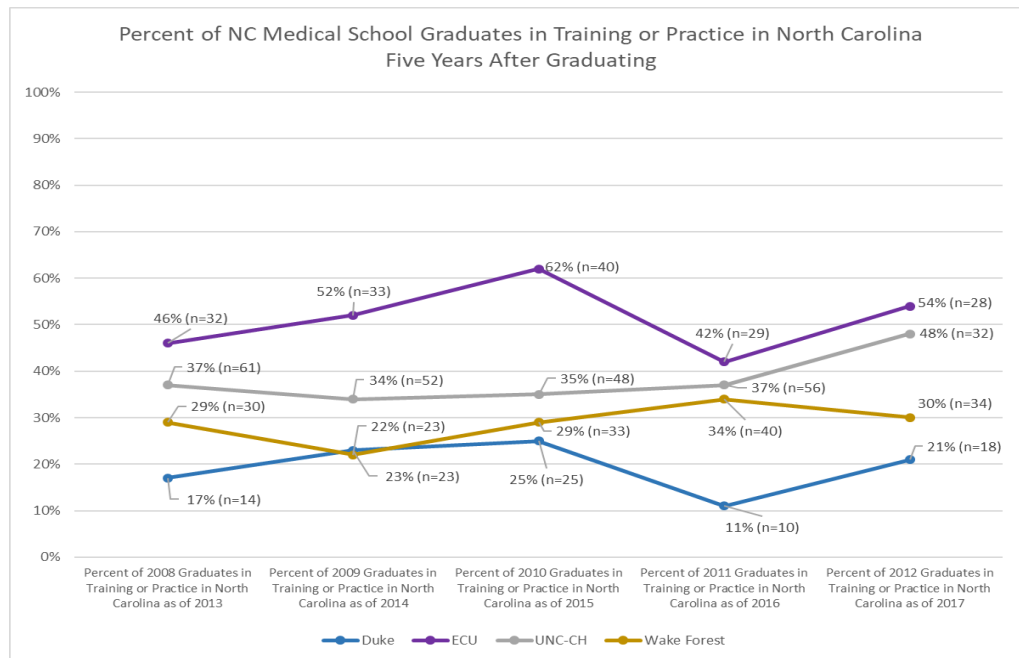
The American Academy of Family Physicians (AAFP) has recognized the Brody School of Medicine as one of the Top 20% of medical schools for producing Family Physicians in the nation over the last seven years (2011-2017). Brody has been among the top five allopathic schools for the past seven years and the only allopathic medical school in the southeast to spend the last decade on the top ten list (2015-2017). In 2019, US News and World Report ranked the Brody School of Medicine as #31 in Best Medical Schools in primary care. From the most available Sheps Center data, the Brody School of Medicine had the highest percentages of graduates in training or practicing in the state and in primary care five years after graduating, 54% and 38% respectively. See Figures 3 and 4

Figure 3



Source: Program on Health Workforce Research and Policy, Sheps Center for Health Services Research, University of North Carolina. (graphs recreated using: Training for future generations innovations in the medical education of physicians in North Carolina.

Figure 4:



Source: Program on Health Workforce Research and Policy, Sheps Center for Health Services Research, University of North Carolina. (graphs recreated using: Training for future generations innovations in the medical education of physicians in North Carolina. <http://www.ncmedicaljournal.com/content/80/3/163.full> )

Data reported in the recently released 2020 AAMC Mission Management tool demonstrated 45.8% of our graduates estimated to practice primary care which places ECU's rank at 100% for percent estimated to practice primary care. This same measure shows 19.6% estimated to practice Family Medicine which places ECU's rank at 98% for percent estimated to practice Family Medicine. In terms of ECU physicians per 100,000 of the North Carolina population, in 19 counties ECU trained more than 25% of the primary care physicians with 13 counties that are rural and medically underserved, 4 counties that are urban and medically underserved and 1 county that is rural and would be medically underserved without ECU's physicians.

In this report we hope to share the pathway to our products that benefit the state of North Carolina. From outreach programs to the learner who may be thinking about medical school or a career in primary care, to results from graduate medical education programs, to new initiatives and planning for the future, Brody lives the mission.

## Outreach and Pathway Programs

A strength that helps Brody in reaching its mission is its commitment to outreach programming. Brody has an outreach platform that extends across the state of North Carolina, reaching Historically Black Colleges and Universities (HBCU) in the state as well as other



Minority Serving Institutions. This outreach platform involves sharing the mission of primary care to undergraduate learners and others and sharing pathways to careers in the health professions. A most important aspect of this outreach is a sharing of the pathway and pipeline programs that exist at Brody; programs to help students along their journey to medical school or graduate school. Brody has several programs that are designed to immerse a learner in preparation activities for research or clinical care. These programs have achieved mission fit results and are talked about across the region. Not only that, Brody has outreach into the local schools of Pitt County, working with middle and high school learners to expose them to health careers, science, mathematics and study skills. Programs highlighted in this report are the Brody RISE pre-college program, the Summer Program for Future Doctors (SPFD) and the Early Assurance Program.

### **Brody RISE**

The Brody RISE, pre-college program, offered through the Office of Diversity Affairs, is a pathway designed to increase diversity in medicine through academic enrichment and healthcare exposure for students in grades 6 through 12. While some may think RISE is an acronym, it is actually a concept based on slope where  $y=mx+b$  and  $m$  is the slope, or rise over run. The program is focused on meeting learners where they are, across the spectrum of academic accomplishment. While only focusing now on pre-college learners, RISE is intended to impact learners at the community college, undergraduate and post-baccalaureate levels. Learners RISE to a career in healthcare and research while increasing leadership skills and professionalism. The Brody RISE Learning Hub serves as a classroom for enrichment activities for the program and our basic science partner, the Department of Biochemistry, provides additional laboratory support and enrichment resources for RISE learners. Partnerships for RISE include schools in Pitt County with 94% of Brody RISE students being from groups who are underrepresented minorities in medicine.

### **Summer Program for Future Doctors**

The Summer Program for Future Doctors (SPFD) is a program with a mission focused approach to recruit underrepresented minority students to Brody. The program is jointly operated by the Offices of Medical Education and Diversity Affairs and plays a vitally important role in helping Brody meet its primary care and regional health care mission.

This nine-week program is primarily for college students and graduates from underrepresented populations who wish to become physicians. Program participants receive a living stipend to attend the program, which features 220 hours of instruction in basic sciences (e.g., biochemistry, anatomy, physiology, neuroscience) and offers instruction in learning skills, test-taking strategies, teamwork and formal preparation for the medical school admissions process, as well as opportunities to demonstrate students' abilities to perform successfully in a medical

school curriculum. In addition, they are taught academic study skills and can experience clinical patient care in our primary care clinics.

The program is popular statewide, usually attracting between 125-200 applicants each year. Strong preference given to mission fit applicants who are underrepresented minorities in medicine, from an environment that has inhibited the applicant from obtaining the knowledge, skills and/or abilities required to enroll in and graduate from medical school, or from a family with an annual income below a level based on low-income thresholds according to family size, published by the U.S. Bureau of the Census.

Table 2:

<b>Gender, Ethnic Self-Description, NC Economic Tier of Home County for SPFD Students Accepted to Medical School</b>									
	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Total</b>	<b>Percent</b>
Female	4	5	6	6	10	7	4	<b>42</b>	<b>48.3%</b>
Male	9	9	6	3	6	7	5	<b>45</b>	<b>51.7%</b>
Hispanic	0	0	0	0	1	1	0	<b>2</b>	<b>2.3%</b>
African American	4	3	4	2	0	2	3	<b>18</b>	<b>20.7%</b>
Native American	0	1	0	0	0	0	0	<b>1</b>	<b>1.2%</b>
Asian American	2	1	2	2	3	3	1	<b>14</b>	<b>16.1%</b>
Caucasian	7	8	6	5	12	8	5	<b>51</b>	<b>58.6%</b>
Tier 1	2	4	0	2	3	0	2	<b>13</b>	<b>18.0%</b>
Tier 2	5	3	4	1	3	3	5	<b>24</b>	<b>29.5%</b>
Tier 3	6	7	8	6	10	10	2	<b>49</b>	<b>61.3%</b>

From the years 2012-2018, being accepted to SPFD improved the chances of gaining admission to any medical school to 49.4%. Not all SPFD students apply to medical school during the next application cycle; some are still in undergraduate education and apply in subsequent years. Some change career paths and do not apply at all. Of the 94 non-matriculating students in SPFD who did apply to medical school, 84 were admitted to Brody or some other medical school. Nearly 90% of the SPFD students who have applied to medical schools over the years of 2012 through 2018 have gained admission. During this same time period, 24.2% of underrepresented minority in medicine students who participated in SPFD were accepted to Brody or some other medical school.

## **Early Assurance Program**

The Brody School of Medicine offers an Early Assurance program with the East Carolina University undergraduate Honors College. This program guarantees enrollment into the Brody School of Medicine to four outstanding freshman students at East Carolina University upon successful completion of their college degrees. The Early Assurance program not only helps us meet our primary care mission by helping attract learners for the medical school, it helps us increase access to underrepresented minority students as partner schools include the HBCU North Carolina Agricultural and Technical State University and the minority serving institution, UNC-Pembroke. Students selected for early assurance must maintain a set grade point average, participate in enrichment activities, and (depending on their undergraduate standardized test scores) are not required to take the Medical College Admissions Test.

As a result of these collective efforts, we continue to realize diversity among our student body that consistently places Brody above the 90th percentile nationally for our percentage of underrepresented in medicine minority students in the school according to the AAMC's annual Mission Management Tool.

## **Medical Student Admissions**

Key to fulfilling our mission is the admissions process to become a medical student at Brody. The Admissions Committee includes students and faculty who strive to select an entering class of students that reflect the diversity of the state and show promise of becoming primary care physicians in North Carolina. It places significant value in recruiting mission-fit students with a track record of community and service engagement. Applicants must not only meet standards related to academic ability, but must also demonstrate, emotional intelligence, considerable exposure to medical practice and significant contributions to community service. The goal of the Admissions Committee is to select an entering class that is comprised of students of various ages, ethnic backgrounds, cultural heritages and religious beliefs. With an applicant pool of more than 1,000 students per year - all of whom are North Carolina residents – the committee selects 86 students to matriculate in each M1 class. The entering class in 2019 included students who represented 26 distinct counties in North Carolina, and 30% of the class identifies as Black, Hispanic or American Indian.

In addition to a focus on recruitment of underrepresented minority students, we also recruit for students from rural and disadvantaged backgrounds. Many studies have provided evidence that applicants from small towns in rural areas are significantly more likely to practice in those same or similar locations upon completion of their training. From 2015 to 2019 the average number of medical school students from Tier 1 and Tier 2 counties was 41%. During this same period, the average number of medical school students with E01 status was 18%.

In order to support the work of the Admissions Committee and to provide a means of sharing the work of Brody across the state, the Associate Dean of Admissions holds an annual Pre-Medical Advisors Conference with college pre-medical student advisors. This conference fosters understanding of the mission and outcomes of medical graduates from Brody. Since 2011, this conference has included the School of Dental Medicine at East Carolina University in order to enhance the enrollment of professional students at both schools.

### **Medical Education: Curriculum Emphasis for Primary Care**

Medical students at the Brody School of Medicine are introduced to primary care in the first week of medical school and throughout the 20-month pre-clerkship foundational phase of the curriculum. The Foundations of Doctoring courses are directed by faculty members from the Department of Family Medicine and include teaching faculty from Family Medicine, Internal Medicine, and Pediatrics. As part of the 2016 curriculum change, students in the first year spend ten afternoons in the office of a community primary care physician to observe the type of care provided in primary care practice and to learn how to take a thorough patient history and perform a physical examination. Students are also mentored in the clinical skills lab and work with a family medicine trained medical director, primary care faculty, standardized patients and physical diagnosis trainers who aid in assuring understanding and competence. In the second year, students participate in a primary care preceptorship where they work for one week one-on-one with a community preceptor in a primary care physician's office in North Carolina.

The third-year curriculum includes clerkships in Family Medicine, Internal Medicine, Pediatrics, Psychiatry, Surgery and OB/GYN. Students are intimately involved in the team care of the patients. On the Family Medicine clerkship, students spend 50% of their time (4 weeks) living and working in a North Carolina community, learning community based primary care. The Pediatric clerkship includes a two-week community-based elective in eastern North Carolina during which students see children with a local pediatrician. Learners also investigate a population health issue and report back to their cohort upon their return to campus. During the fourth year, all students are required to take a four-week elective in Primary Care. Eastern AHEC is instrumental in helping with housing arrangements for Brody students who train in the community. Students also have 22 weeks of electives from which to schedule clinical training that enhances their career choice and residency preparation.

### **Medical Education: Service Learning Opportunities**

As a medical center in the middle of a medically underserved region, service is integral to the mission of Brody. Faculty role modeling and support serves as a foundation for value placed on

service. Students are regularly notified of opportunities for service-learning through publicly posted announcements, email, and social media. Most Brody students participate in structured service-learning activities that help guide their career choices. Information from the American Association of Medical Colleges annual graduate survey illustrates the degree of service learning that Brody students have compared to an average of all medical schools in the US (source: 2019 Graduate Survey)

Table: 3

Activity	% of Brody Students	% of Students Nationally
Global health experience	35.5%	24.2%
Educating elementary, high school or college students about careers in health professions or biological sciences	74.2%	53.7%
Providing health education (e.g. HIV/AIDS education, breast cancer awareness, smoking cessation, obesity)	79.0%	64.5%
Field experience in nursing home care	51.6%	29.0%
Experience with a free clinic for underserved population	91.9%	74.1%

Service-learning allows students to design, execute and reflect on activities that address community-identified needs. Service learning is strongly aligned with the mission of Brody and gives us further opportunity to engage learners around meeting community needs. All students are required to complete a service learning experience and through the combination of required and elective service learning experiences students complete written reflections to further qualify their learning.

The medical school supports service-learning formally through the establishment of a Service Learning Distinction Track led by two faculty mentors and a staff coordinator who provides administrative support for activities. Service activities that are initiated through university approved student-run organizations are eligible for recurrent funding from the ECU Student Government Association. All Brody student organizations are recognized by the Student Government Association at East Carolina University. Through this relationship, our student organizations can apply for additional funding for special projects or events.

Over 90% of Brody students continue to provide care at one of two free clinics in the local community under the guidance of clinical faculty who serve as preceptors. The Crossroads Community Center houses a student-managed clinic with oversight from a board of community members, faculty and students. The shelter clinic meets Monday evenings and

alternating Thursday evenings to see, on average, 10 patients at each clinic. The Pitt County Care Clinic is a student-managed clinic that meets at the local health department on Sundays at noon. Students are supported by volunteer physicians, residents, social workers, and physician assistants. They see an average of 9-11 patients weekly, predominantly from a local Latinx population. Services from these clinics include medications, medical assessments, treatments and referral to medical homes or specialists at the Brody School of Medicine or the Bernstein Community Health Center. An interpreter is always present to assist the patients, students and preceptors. Both clinics are supported weekly by Health Assist care coordinators and social workers who serve as care coordinators and counselors for patients. Health Assist is an uninsured care program housed within Access East, an ECU-Vidant partnership.

Our students join together to perform health fairs and screenings within the community in addition to the scheduled clinics. A collaborative cohort of 67 volunteers made up of Brody medical students, PT and PA students, Health Assist, and clinical providers teamed together in October to provide a community foot clinic for the homeless. Forty-seven patients were seen and treated at this event.

Six students from the Brody School of Medicine were awarded NC Schweitzer Fellowships for 2019-20, this is over 5% annually. These service-learning awards enable students to build leadership skills and inspire service in others. Two of our graduating Fellows have led a group of Brody students in teaching infant CPR to new parents at Vidant Medical Center. They have taught this class on Monday evenings for the past three years and will be turning it over to a new group of students to sustain the project after their graduation.

There are several interest groups that students are encouraged to join during orientation to medical school. These interest groups foster an interest in primary care and provide rapport with residents from the primary care disciplines. Interest groups include the Family Medicine Interest Group, the Med-Peds Interest Group, the Internal Medicine Interest Group and the Pediatric Interest Group. Service learning is one of the goals for each of these groups.

Service to the communities of North Carolina has earned Brody international recognition. Brody was one of seven schools globally, and one of only two in the US, to receive a 2016 Aspire to Excellence Award, which recognizes outstanding performance in education at medical, dental and veterinary schools. The Association for Medical Education in Europe distributes the award in four categories, and Brody was honored in the social accountability category for emphasizing training in primary care settings in local practices throughout our students' four years.

### **Graduate Medical Education and Beyond**

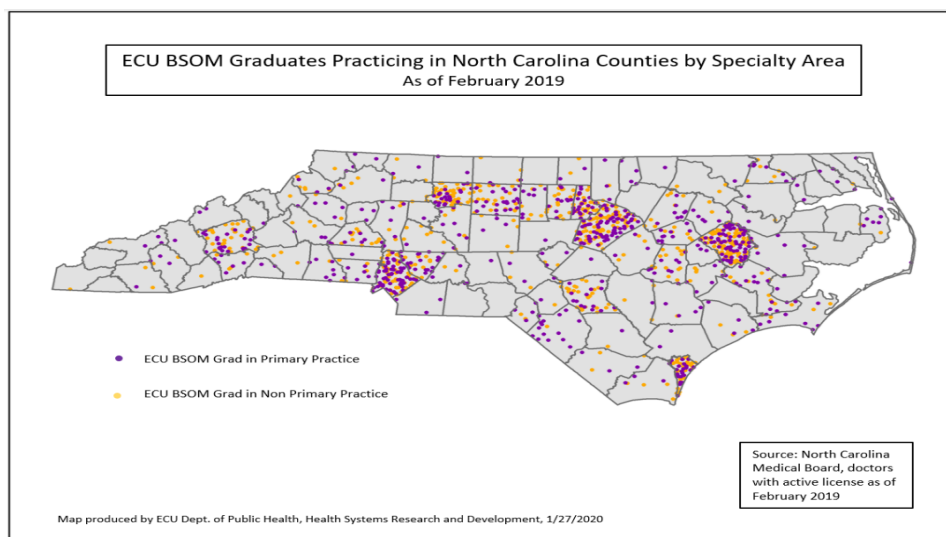
Early and applied exposure to primary care contributes to the Brody School of Medicine's success in placing our graduates in primary care residencies. According to the AAMC Student

Record System, in the last 4 years (calculated for 2016-2019), 73% of Brody students matched to residency programs in primary care in North Carolina. The table below provides detailed information regarding primary care residency selection by Brody School of Medicine students from 2016 to 2019:

	2016		2017		2018		2019	
Total Graduates	62		79		76		73	
Total Graduates not entering residency	1		2		0		0	
Total Graduates entering residency	61		77		76		73	
Primary Care (PC)	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Family Medicine	23%	14	17%	13	20%	15	11%	8
Internal Medicine	16%	10	14%	11	18%	14	18%	13
Pediatrics	18%	11	22%	17	17%	13	15%	11
IM/Peds	10%	6	4%	3	7%	5	1%	1
<b>TOTAL PC</b>	<b>67%</b>	<b>41</b>	<b>57%</b>	<b>44</b>	<b>62%</b>	<b>47</b>	<b>45%</b>	<b>33</b>
OB/Gyn	8%	5	5%	4	3%	2	11%	8
<b>TOTAL w/ Ob/Gyn</b>	<b>75%</b>	<b>46</b>	<b>62%</b>	<b>48</b>	<b>65%</b>	<b>49</b>	<b>56%</b>	<b>41</b>

Consistent with earlier tables, which displayed the school's outcomes of retaining graduates in state to practice five years after their training, the class of 2018 and 2019 graduates responded to the AAMC Graduate Survey with intention to practice in North Carolina at rates of 76.2% and 57.4% respectively. These graduates also reported plans to practice in rural communities, small and medium sized towns (under 10,000 people; other than suburb) at a rate of 6.7% compared to 3.5% nationally, and work with an underserved population 56.7% vs. 36.1% nationally. Following residency training, Brody graduates make a significant contribution to the region and state, as shown from our alumni tracking below:

Figure 5:



According to the January 2018 report on Graduate Medical Education (GME) in North Carolina, Sheps Center data also demonstrate that Vidant Medical Center, one of the larger GME residency programs in the state, consistently ranks at or near the top of in terms of the proportion of their residency graduates practicing in rural areas. Compared to other programs in North Carolina:

- 30% of Vidant family medicine residency graduates (45 of 149 residents) are in rural areas compared to an average of 17% for all NC family medicine residency training programs
- 26% of Vidant internal medicine residency graduates (21 of 80 residents) are in rural areas compared to an average of 12% for all NC internal medicine residency training programs
- 28% of Vidant pediatrics residency graduates (23 of 81 residents) are in rural areas compared to an average of 10% for all NC pediatrics residency training programs
- 33% of Vidant obstetrics and gynecology residency graduates (15 of 46 residents) are in rural areas compared to an average of 16% for all NC obstetrics and gynecology residency training programs
- 41% of Vidant general surgery residency graduates (7 of 17 residents) are in rural areas compared to an average of 26% for all NC general surgery residency training programs
- 25% of Vidant total residents (211 of 859) are in rural areas compared to an average 11% for all NC residency training programs

## **New Initiatives**

Since our last report in 2018, Brody has added the following new programs and initiatives that we believe are additive to the primary care mission:

- BSOM is continuing to refine its Health Systems Science curriculum, leading the nation in developing the tools that will allow our graduates to lead
- The four para-curricular Distinction Tracks in (a) Health System Transformation and Leadership, (b) Research, (c) Service Learning, and (d) Medical Education have energized the school, allowing talented students to flourish with track-specific mentorship and guidance. These tracks engage 10 students per program – who are competitively selected after their first semester of medical school – in doing more intensive, focused training in each of these areas
- The expansion of clinical training in the foundational (pre-clerkship) phase allows students to appreciate and understand clinical applications while they master the basic science subjects.
- A new Office of Data Analysis and Strategy has been created for educational data for the creation of business processes and for centralization, operationalization and



visualization of educational data

- New committees have been formed to enhance the learner experience and provide a more structure means for quality improvement. The Learning Environment Committee has been formed as a committee of faculty, staff and students to help with the creation and promotion of a positive learning environment for medical students. The Committee on Curriculum and Education Quality has been formed to provide a process for continuous quality improvement and education program review.

## **Primary Care Plan UNC Chapel Hill School of Medicine**

**PREFACE** The vision of the UNC School of Medicine is to be the nation's leading public school of medicine. To that end, we have a broad mission that includes educating a large number of primary care physicians to serve our state. The UNC School of Medicine (UNC SOM) continues its fundamental and substantial support for primary care. We are proud to celebrate that in 2019 US News and World Report named us the #1 primary care school in the nation. This is evidence of our efforts and success as well as our strong reputation in this area. Our School of Medicine is strong in primary care because of our exceptional faculty and students, large teaching presence of primary care faculty, a curriculum that allows students to participate in longitudinal clinical experiences in primary care settings across the state, and support from our partnering health systems to ensure that those settings provide high quality clinical and educational experiences. The UNC School of Medicine also has extensive service and research opportunities, collaboration with the North Carolina AHEC distributed educational system, and ongoing tracking of the longer-term outcomes of medical education through the Health Profession Workforce unit at the Cecil G. Sheps Center for Health Services Research. These programs have been outlined in prior reports.

This report outlines new programs that the UNC SOM has added to its primary care medical education plans since the prior report and also highlight important initiatives that were mentioned in prior reports. The American Association of Medical Colleges (AAMC) each year publishes a Missions Management Tool, which helps to compare data on allopathic medical schools. In 2019, UNC SOM was highly ranked in a variety of important markers that support our mission to primary care and serving the underserved.

### Commitment of our graduates to service

- The percentage of graduated who plan to care for the underserved (84<sup>th</sup> percentile)
- The percentage of graduates now practicing in primary care (67<sup>th</sup> percentile)
- The percentage of graduates now practicing in rural areas (69<sup>th</sup> percentile)
- The percentage of graduates now practicing in underserved areas (76<sup>th</sup> percentile)

### Diverse faculty and students:

- The number and percent of graduates who are African American (94<sup>th</sup> percentile)
- The percent of graduates who are Native American (78<sup>th</sup> percentile)

- Number of women faculty (81<sup>st</sup> percentile)
- Number of URM faculty (72<sup>nd</sup> percentile)

These figures are particularly impressive given UNC's broad mission and high rank in NIH funding. These \$500 million of annual research dollars bring substantial dollars to the state.

## STRATEGIES

Despite these impressive statistics, our state and our country continue to face a significant shortage of primary care physicians, especially in rural and urban underserved areas. We are addressing these challenges using a three-pronged strategy. State support is critical to these efforts as we continue to improve each of these strategies.

- **Strategy 1: Recruit students who want to practice in primary care (while at the same time also recruiting students who will be the leaders in research and subspecialty care)**
- **Strategy 2: Provide a curriculum that gives students the foundation to understand and succeed in primary care**
- **Strategy 3: Train students in model teaching practices where students can work in high functioning primary care teams**

A related strategy is important to consider but is not directly within the mission of the UNC School of Medicine. There is substantial evidence that to improve the health care and health outcomes in a sustainable way, increase spend on primary care is needed. <https://www.graham-center.org/rgc/press-events/press/all-releases/050918-greater-spending-primary-care-apm-success.html>.

**Strategy 1: PREMEDICAL PREPARATION AND ADMISSIONS:** The UNC School of Medicine has the largest medical school class size in the state. This past year we had 6282 applicants and interviewed 629 to fill our class of 190 students per year. Thanks to the bond passage in March, 2016, we are in the process of designing a new medical education building to accommodate an even larger class size. Should funding be made available, we hope to increase our class size to 230, which has been approved by the Board of Governors. In selecting our class, we admit those who are both academically qualified and most likely to make an impact of service in the broad spectrum of need through their doctoring.

We are committed to recruiting a diverse student body as we know from the literature that medical students from underrepresented in medicine (URM) backgrounds are more likely to serve areas of high need. The Office of Medical Education oversees diversity pipeline efforts through its Office of Scholastic Enrichment and Equity (OSEE). The Medical Education Development (MED), run by OSEE, is a nationally known, more 40-year-old SOM program pipeline program that helps facilitate diversity within the student body by recruiting and supporting minority and/or disadvantaged students. Through its academic program, it provides students a chance to enhance their academic credentials while preparing for medical or dental school admission and increases personal and academic skills. The focus of the MED program has been expanded to recruit more Native American and Latino students, first generation college students, and rural students of all ethnic backgrounds. In 2017 the MED program expanded its enrollment by 10 students specifically recruited from rural backgrounds. Our vision is that we will develop rural recruiting as a special pipeline just as we have succeeded in recruiting African American physicians.

We are investing in rural recruiting similarly and aspire for comparable outcomes. It is recognized that to address the need for a rural physician workforce we need to accept and educate medical students who have been raised in rural areas. The single most important factor in getting a physician to serve a rural area is his or her experience previously living in a rural area. We have also launched a variety of pipeline programs targeting talented young people in rural areas and cultivating their interest in medicine.

- Rural Medicine Project- cohort-based program in partnership with the Carolina Covenant Scholars program and the Office of Scholarships and Student Aid at UNC. Getting ready to recruit 3<sup>rd</sup> cohort in fall 2020.
- Community High School Events – County-wide, multi-county and individual high school outreach programs across the state in rural counties.
- Family Medicine Summer Academy – Housed in the Dept. of Family Medicine with support and partnership with ORI. 3 day immersive experience for students age 18-20 from NC (targeted towards rural NC). 3<sup>rd</sup> summer of programming 2020.
- Health Careers Fair NC – week-long program across the state hosted at regional universities to connect students to admissions/recruitment/staff in health affairs programs. These events are shared between OSEE and ORI, with student and staff support to attend all events. This is not a UNC event, but sponsored by the Health Professions Advisers of NC.

- SEP/MED funding – funding support for expansion of SEP (Summer Enrichment Program) and MED (Medical Education Development) for students from rural NC. ORI presents and hosts lunch with the rural students each summer, as well as presentations to the larger cohort of all students in each.
- Honors College Programming – yearly presentations to incoming Honors College students at UNC about UNC SOM, and rural health in NC, and programs that support workforce for rural NC.
- Rural Health Outreach Club NCSU – Rural Health Outreach Club at NCSU officially established in fall 2019; Beginning spring 2018, FIRST and Kenan leadership met with student from NCSU interested in launching rural health interest group at NCSU. Since NCSU does not have a medical school, we acted as unofficial advisers prior to organization being officially recognized at NCSU. Hosted events, connected students to resources and programs, shared information around rural workforce needs in NC and UNC SOM supporting those needs, and supported community service program in Pender County following hurricane Matthew’s devastation.

**Strategy 2 and 3: The UNC School of Medicine seeks to provide the curricular programs and the model teaching practices that allows students to succeed in a career in primary care, especially in rural and urban underserved areas:**

- KENAN PRIMARY CARE MEDICAL SCHOLARS In 2012, Sarah Graham Kenan Rural & Underserved Medical Scholars Program was launched. This program provides support for up to 10 carefully selected medical students to engage in a community project in a rural area in the summer after their first year, participate in focused rural training during their clinical education, and experience focused small group sessions to advance their skills and knowledge about rural primary care. Scholarship support for these students is provided thanks to the Kenan Charitable Trust and the State Legislature. The purpose of this program is to ultimately increase the number of UNC SOM students seeking rural health careers in North Carolina and to provide financial support and enrichment experiences to sustain their decisions. In 2018 this program expanded to allow students to train in rural areas near the Wilmington and Chapel Hill campuses as well. The Kenan Primary Care Medical Scholars programs now has its first class finishing residency, all in high need fields. At the time of this writing, 100% of those Scholars are entering practice in North Carolina in high need disciplines.

- **NC RURAL PROMISE SCHOLARSHIP** In 2015 the UNC School of Medicine was given the generous sum of \$1M annually from the state legislature to expand the successful Kenan Rural Primary Care Medical Scholars program. With those state funds we have expanded the Kenan Scholar program as it is and also are offering one-time loan repayment with an expectation that they will later serve rural county of NC in the high need fields of primary care (which we define for this as Family Medicine, Internal Medicine, and Pediatrics), Obstetrics and Gynecology, General Surgery, and Psychiatry. There are about 15-17 applicants to the program in a typical year. The first few cohorts of this program are now in residency training. It is anticipated that they will soon begin to work in rural areas as practicing physicians.
- Our staff lead for the Office of Rural Initiatives travels across the state of NC to colleges, community colleges, and high schools to focus on inspiring bright students from rural areas to pursue careers as physicians. This person is especially reaching out to college students in the UNC System from rural areas to entice and help prepare them for medical school.
- **RURAL INTER-PROFESSIONAL HEALTH INITIATIVE (RIPHI)** The UNC Rural Interprofessional Health Initiative (RIPHI) is a three-year pilot program supported by a \$1.5 million award from the William R. Kenan, Jr. Charitable Trust started in 2017. This award is providing faculty and programmatic support that allows UNC health professions students to serve and learn in underserved rural clinic settings in North Carolina. Goals of the project are to inspire a rural health care workforce and to help transform clinical care in underserved areas and to establish interprofessional clinical experiences in rural areas of North Carolina. The RIPHI program is a joint effort of the health professions schools at UNC, each of which has a similar mission – improve and promote the health and wellbeing of North Carolinians, improve public health and eliminate health inequities, advance and advocate for health care through education, practice, research, innovation and collaboration. Meg Zomorodi, PhD, RN, CNL, Clinical Professor in the School of Nursing serves as the Assistant Provost for Interprofessional Education and Practice. The RIPHI award also provides funding support for UNC RIPHI Faculty Champions at each of the UNC Health Affairs Schools – UNC Eshelman School of Pharmacy, UNC Gillings School of Global Public Health, UNC Schools of Dentistry, Nursing, Social Work, and UNC School of Medicine and its Department of Allied Health Sciences, and support for the UNC RIPHI Rural Site Investment Fund to foster clinical community site development and implementation. The Faculty Champions are working in partnership to guide the RIPHI program and provide perspective and support from each health profession.

- **COMMUNITY ENGAGEMENT PROJECTS** The Office of Rural Initiatives also secures and funds summer community engagement projects for first year medical students. We know from the evidence in the literature that students learning in rural communities are more likely to serve in rural communities long term.
- **FULLY INTEGRATED READINESS FOR SERVICE TRAINING (FIRST)** In 2016 we launch the FIRST program, funded by The Duke Endowment. This innovative experience allows a small cohort of mature students with advanced clinical experience to graduate from medical school in 3 instead of the typical 4 years and funnel directly into primary care residency programs in the state. During residency, they train in more rural areas and underserved settings and graduate from residency with intent to serve as primary care clinicians in high need areas of our state. The first cohort of FIRST students is now completing residency training at the UNC Family Medicine Residency program. In the upcoming years, students will also enter residency training in programs across the state (including Asheville, Greensboro, and Wilmington) and in multiple high need specialties (including psychiatry, pediatrics, and general surgery). UNC received one of eight AMA Reimagining Residency grants to expand our efforts statewide and to different specialties of high need.
- **THE MEDICAL SCHOOL CURRICULUM AT UNC** revised in 2014 better prepares students to practice primary care. It emphasizes longitudinal care, social and health systems science, interprofessional education, and professional development. Students have more time to individualize their curriculum through tracks and more elective experiences. This curriculum is gaining a national reputation for innovative ways to train aspiring physicians in primary care. UNC has been participating in the AMA Accelerating Change in Medical Education Consortium.
- **THE GROWTH OF REGIONAL CAMPUSES FOR THE UNC SCHOOL OF MEDICINE** One way to develop a workforce for the state is to educate medical students throughout the state. For that purpose we have expanded our regional campus system. Regional campuses are an efficient and effective method for providing clinical education in settings where we hope to inspire physicians to practice. Using the resources of the large and accomplished health affairs campus in Chapel Hill, we bring all 190 of our medical students to the University for the Foundation Phase of their curriculum. Here they learn from expert scientists and clinicians and benefit from interprofessional learning experiences with students at UNC's top schools of Allied Health, Dentistry, Nursing, Pharmacy, and

Public Health. We teach using our impressive Simulation Center and the resources across the UNC CH campus as we prepare medical students to learn in the clinical environment. Then, we distribute those students across the state using AHEC resources at our regional campuses and elsewhere, intending to inspire state service in a variety of communities outside of the Triangle. In anticipation of losing the Charlotte campus, we are expanding teaching sites in Raleigh, Greensboro and also looking at other UNC Health Affiliated Hospitals in more rural parts of the state. Regional campuses are a unique feature of the UNC SOM that accrue substantial benefit to UNC students and faculty. Regional campuses create an environment for incorporating innovation into the curriculum, are a much more cost effective model, leverage the faculty and resident teaching capacity already in place at the regional campuses and create the potential for drawing a much larger pool of doctors into primary care. The longitudinal program in Asheville deserves particular mention in relationship to primary care. It has been successful in multiple years to recruit students to family medicine and primary care far above the national average. The class size in Asheville has grown to 30 in response to high student demand and legislative investment. The state funded education building in Asheville now provides state of the art facilities to educate learners across the health professions. The Eschelman School of Pharmacy, the Adams School of Dentistry, and the Gillings School of Global Public Health now train students there. The Wilmington campus has also been a success story. In 2016, we opened the branch in Wilmington. This campus began with only 3 students but has now grown rapidly and is anticipating recruiting 18 students from the current first year class. In addition to their core clinical curriculum, the students on this campus students get a certificate from the UNC Wilmington Cameron School of Business in Physician Leadership.

- **LOW STUDENT DEBT** Thanks to generous State and philanthropic support our graduates have significantly less debt at graduation than their national peers. (\$144,000 at UNC compared to \$200,000 nationally). Lower debt burden also correlates with service in primary care in underserved areas.
- **EXTRACURRICULAR OPPORTUNITIES** UNC School of Medicine students participate in a wide variety of activities that provide service to the community and educate students in ways that lead to support of primary care careers. We honor many of those students with membership into the Eugene Mayer Honor Society for Community Service. Our students also continue to expand the work of SHAC, the Student Health Action Coalition, the oldest continuously running student free clinic.



More student-led and faculty supported initiatives have grown out of this model including Beyond Clinic Walls (a mobile SHAC unit), Amigas en Salud, a program for health and wellness in the Latina community, and the Refuge Health Initiative. Supported by Albert Schweitzer scholarships, we also have several groups of students working with community organizations and faith-based programs to support community health. Participating in these models of interprofessional education and teamwork prepares students to function in the medical homes of tomorrow and, through student service, hopefully inspires a commitment to meeting the primary care needs of patients and communities.

In support of primary care, UNC has large residency programs in all of the primary care and needed disciplines. Two residency programs in primary care at UNC have developed specific tracks into underserved primary care, the Family Medicine Underserved Track and the Pediatrics Primary Care Residency. Though not part of the School of Medicine curriculum for the MD degree, the presence of these programs is inspirational for our students and certainly in support of the primary care mission. The Pediatrics Primary Care Residency Program at the University of North Carolina is a program developed in collaboration with Cone Health in Greensboro for 4 residents per year to experience a more longitudinal model of training focused on providing a medical home for children. It was initially funded by HRSA and now is funded through partnership between UNC Health Care and Cone Health. One hundred percent of the residents in that program, since its opening in 2011, intend or have entered careers in primary care.

**In summary, the University of North Carolina School of Medicine is a leading public medical school, recognized by US News and World Report as #1 in Primary Care. We remain committed to innovative recruitment, curricular and educational programs to support our students' opportunities to become physician leaders in addressing the primary care needs of our state and the health of our population. We will continue the work outlined above.**

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

Primary Care Medical Education  
Plan 2016 Update

from  
Wake Forest School of Medicine

February 2020

Respectfully submitted by:

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

Since 1994, Wake Forest School of Medicine has submitted an institutional plan for increasing the number of generalist graduates including students entering the primary care disciplines of family medicine, internal medicine, obstetrics/gynecology and pediatrics every two years. Initiatives described in the plan included work within the Department of Family Medicine and the administration of the Northwest Area Health Education Center. This update will focus on current and planned initiatives, which are directed toward ensuring that our educational programs meet the needs of our students and society.

Recent support for curriculum innovation has come from Northwest AHEC, the Duke Endowment, and from the Fullerton Foundation in South Carolina.

One metric used to evaluate the effectiveness of our programs to train students for a career in primary care is the number of Wake Forest School of Medicine graduates entering primary care related residences. In 2019, 38.8% of graduates from Wake Forest School of Medicine entered residencies in primary care associated disciplines. Over the last 7 years, this percentage ranged from 34.8% to 49.6%.

**Graduating Class of ...**

<b>Residency Match</b>	<b>Family Medicine</b>	<b>Internal Medicine</b>	<b>Obstetrics &amp; Gynecology</b>	<b>Pediatrics</b>	<b>Total Graduates</b>
<b>2013</b>	11 (8.8%)	27 (21.6%)	2 (1.6%)	15 (12%)	125 (44%)
<b>2014</b>	13 (11.3%)	13 (11.3%)	4 (3.5%)	10 (8.7%)	115 (34.8%)
<b>2015</b>	9 (7.9%)	14 (12.3%)	3 (2.6%)	17 (14.9%)	114 (37.7%)
<b>2016</b>	9 (8.3%)	23 (21.1%)	4 (3.7%)	11 (10.1%)	109 (43.1%)
<b>2017</b>	16 (13.9%)	19 (16.5%)	11 (9.6%)	11 (9.6%)	115 (49.6%)
<b>2018</b>	6 (5.7%)	16 (15.2%)	9 (8.6%)	7 (6.7%)	105 (36.2%)
<b>2019</b>	8 (6.6%)	17 (14%)	11 (9.1%)	10 (8.3%)	121 (38%)
<b>7- Year Cumulative Total</b>	72 (9%)	129 (16%)	44 (5.5%)	81 (10.1%)	804 (40.5%)

Another metric used to evaluate the success of our primary care initiatives is through the results from the 2019 Association of American Medical Colleges (AAMC) Graduation Questionnaire. The Family Medicine Clerkship at Wake Forest School of Medicine ranked higher than the national average in regard to student report of the quality in the “good and excellent” categories of the educational experience (94.3% Wake Forest; 84% national average). Additionally, based upon the 2019 AAMC Graduate Questionnaire, our graduates reported a higher percentage of experience with a free clinic for the underserved population (93.1% Wake Forest; 74.1% national average).

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

## 1. Enrollment

Despite the loss of Board of Governor scholarships, Wake Forest School of Medicine has, and continues the commitment to the disproportionate selection of North Carolina residents for admission to Medical School. We had 10,703 applications for the 2019 entering class (graduating Class of 2023), with 930 (8.7%) applicants from North Carolina. 45 (31%) North Carolina residents were selected and matriculated into the 145 member Class of 2023. Over the past seven entering years (2013-2019), Wake Forest School of Medicine has enrolled 298 (32.7) total North Carolina residents. See the recent trend detailed data below.

Year of Matriculation	Total # Applicants	# NC Applicants	NC Matriculants	Total Matriculants
2013	7,432	753 (10.1%)	54 (45%)	120
2014	8,091	785 (9.7%)	32 (26.7%)	120
2015	8,602	832 (9.7%)	34 (28.3%)	120
2016	9,115	875 (9.6%)	42 (32.6%)	129
2017	9,281	891 (9.6%)	46 (33.8%)	136
2018	10,449	956 (9.1%)	45 (32.1%)	140
2019	10,703	930 (8.7%)	45 (31%)	145

## 2. Curriculum

Currently, our curriculum provides Wake Forest MD students early clinical exposure and improved continuity and development of longitudinal relationships with faculty mentors and medical teams. Key curricular initiatives that are targeted at primary care include:

### A. Community Practice Exposure

The School of Medicine's curriculum committee is constantly reviewing courses and ensuring our students are gaining a variety of experiences. Beginning in spring of 2019, community practice time in the required "Clinical Immersion" (clerkship) phase of the curriculum was increased to allow for an increase in exposure to community practices.

### B. Ambulatory Clerkships

During the third year, students rotate through three purely ambulatory experiences: a four-week rotation in Family Medicine, Ambulatory Internal Medicine, and a four-week rotation in Emergency Medicine. Additionally, students get ambulatory exposure through additional clerkships, including three weeks of ambulatory in the Pediatrics rotation, one week in OBGYN outpatient clinics in Women's Health/Obstetrics/Gynecology rotation, two weeks of outpatient clinic in Neurology, and exposure to ambulatory components in the Psychiatry and Surgery Clerkships. Additional primary care experiences are available via electives in the Individualization phase of the curriculum. Multiple community-based practice sites are utilized for student education in these electives.

### **C. Clinical Skills**

The Clinical Skills Foundations (CS1) course is the first year component of students' longitudinal clinical skills curriculum. The overall objective of CS1 is to teach students how to perform fundamental clinical skills including doctor-patient relationship building and communication (DPR) skills, introductory history taking skills, introductory physical examination (PE) skills, and clinical documentation skills, with an emphasis on patient-center care, professionalism, and professional identity development. The CS1 course consists of 18, four-hour sessions distributed over the course of the Year 1 of the Foundations curriculum. Sessions consist of small-group learning activities during which students will learn about and practice multiple clinical skill sets under the guidance of a 2-faculty coach team.

The Applied Clinical Skills (CS2) course is the second year component of students' longitudinal clinical skills curriculum. The overall objective of CS2 is to build upon the foundational clinical skills learned in the first part of the Foundations curriculum and to prepare students for their upcoming clinical rotations in the Immersion curriculum. As in Year 1, students will continue to practice and build their fundamental clinical skills including doctor-patient relationship building and communication (DPR) skills, history taking skills, physical examination (PE) skills, and clinical documentation skills, with an ongoing emphasis on patient-center care, professionalism, and professional identity development. In contrast to Year 1, however, where training is primarily focused on basic data gathering, Year 2 clinical skills training challenges students to learn and practice focused data gathering, data interpretation based on your understanding of pathophysiologic mechanisms of disease, iterative differential diagnosis formulation, and initial diagnostic and management decision-making.

### **D. Population Health – Healthcare Systems and Policy**

Healthcare in America is transforming with a renewed focus on patient safety, quality, and value-based care. To function in this changing landscape, tomorrow's physicians must understand the historical forces driving healthcare reform and the principles shaping new policies. The Healthcare Systems & Policy course was first offered in academic year 2015-2016 and it gives students the knowledge needed to thrive in our evolving healthcare system (including primary care) and meaningfully advocate for future improvements. The course content is delivered by a multidisciplinary team of educators with expertise in health economics, public health and health policy, patient safety, and practice management.

## **3. Research Programs**

The primary opportunity for medical students to participate in research is the Medical Student Research Program (MSRP). This 9-week summer opportunity provides students with the opportunity to work with a faculty mentor on a defined research project in basic, clinical, or community-based research. Many of the research efforts are related to primary care in that they evaluate the treatment of common illness, health outcomes, general health status and/or health delivery services. The MSRP is jointly funded by an NIH T35 Short-term Research Training Grant, institutional, and foundation resources. The MSRP, which includes the Research Ethics Seminar Series and culminates with Medical Student Research Day, is in its

38th year at Wake Forest. Data from the 2019 AAMC GQ, showed that 88.5% of Wake Forest School of Medicine students participated in a research project with a faculty member (80.9% national average) and 28.7% (32.7% national average) participated in a community-based research project.

A second opportunity for medical student research is available through The Maya Angelou Center for Health Equity, which sponsors 1 to 4 additional summer research experiences for students who are interested in investigating health disparities and health equity. The focus of this program is to expose medical students to and advance the conduct of population-impact health research surrounding broad-based, sustainable outcomes that influence health policy in underserved populations. The Maya Angelou Center for Health Equity makes funds available for 10-12 week experiences for Wake Forest School of Medicine medical students who submit proposals, in the MSRP format, that focus on improving minority health or addressing, reducing, or eliminating health disparities especially for the 6 major health disparities areas of cancer, cardiovascular disease, diabetes, HIV/AIDS, immunizations, and infant mortality.

Student research is showcased in the student-run “Wake Forest Journal of Science and Medicine” (WFJSM). The WFJSM is a student-led, open-access, peer-reviewed platform for the publication of clinical and translational science, case reports, perspectives, and reviews. The journal was initiated in 2014 by Wake Forest medical students and is primarily run by students with guidance from the editorial board composed of the Dean of the School of Medicine and 5 additional faculty members.

#### **4. Premedical Preparation**

The Biomedical Science Premedical Post-baccalaureate Master’s Degree Program, is a revision of the previous non-degree granting post-baccalaureate premedical development program that began at the medical school in 1987. The purpose of the program is to prepare students from disadvantaged and/or underrepresented populations for medical school and recruit them to Wake Forest. The program is a preparatory path for Black/African American, Latino/Hispanic and low socioeconomic students to medical school. Since its inception, over 300 students have completed the program with more than 90% matriculating at schools of medicine. In 2014, the revised Post-baccalaureate program enrolled its first class and continues to serve as a preparation and recruitment tool for students underrepresented in medicine as well as socioeconomically disadvantaged students. Students in the Biomedical Science Premedical Post baccalaureate Master’s Degree Program take a minimum of 30-36 semester hour credits in the biomedical sciences. Courses are in disciplines including: biochemistry, molecular cell biology, neuroscience, human physiology, human anatomy, microbiology, pharmacology, critical thinking skills, and study skills to enhance the student’s preparation for their professional school application. Scientific professionalism and the responsible conduct of research courses are available as electives along with additional electives within the Graduate School. Students completing the entirety of the two-year program can graduate with a Master of Science in Biomedical Science.

Additionally, we provide the following student enrichment experiences for high school and/or undergraduate students:

- **Camp Med (Northwest AHEC)** is a week-long summer program initiated in 2000 to provide a medical school experience to high school students. Twenty counties in NC offer Camp Med and the average enrollment in a county’s program during a given week is 12-32 students.

- **Sisters in Science** – An annual event with a mission to engage, educate and provide exploration opportunities in health care to female students from Forsyth County, North Carolina. Initiated in 2005, the average enrollment in this event is 100 students. This is partially supported by Northwest AHEC.
- **Project SEARCH Academy (Northwest AHEC)** – An annual program for minority high school students in Forsyth County, North Carolina, to explore careers in medicine and other health care careers. The program partners with local community colleges and health care systems. Initiated in 2003, the average enrollment in this program is 24 students.
- **SNMA Pre-Medical Conference** - an annual conference to advise potential applicants and pre- medical advisors on preparing for medical school application, interview skills and the MCAT exam (e.g., preparation, resources and updates). Initiated in 2007, the average enrollment in this program is 150 students. This is substantially supported by Northwest AHEC. The last conference was held in February 2018 and was the first year the conference incorporated other healthcare avenues to include the Physician Assistant Program, Nurse Anesthesia Program and the Biomedical Sciences Graduate Degree Programs.
- **National Youth Leadership Program** - a two-week program for 300 high school students selected from a nationwide pool who are interested in pursuing an MD degree. WFSM sponsors three scholarships annually, for Forsyth County high school students from URM or low socioeconomic status households to attend. Initiated in 2011, the average enrollment in this program is 100 students.
- **Undergraduate Student Mentoring** –The Associate Dean for Student Inclusion and Diversity mentors undergraduate students who are preparing for medical school. These students are from a variety of institutions, including Winston-Salem State University, where the Associate Dean for SID has maintained a mentoring small group over the past 8 years (i.e., “Winston-Salem State University Women”).
- **Wake Forest School of Medicine chapter of SNMA** - provides mentoring to chapters of the Minority Association of Pre-Medical Students (MAPS) across the state of North Carolina to discuss applications to medical school.

## 5. Extracurricular Activities/Community Service Opportunities for Students

- DEAC Clinic:** The major community service opportunity for medical students is the Delivering Equal Access to Care (DEAC) Clinic. The DEAC Clinic is a 501(c) (3) student-run and physician-staffed free clinic. Both medical students and physician assistant students are involved. The mission of the DEAC Clinic is to “address the long-term primary care health needs of our local, underserved communities and create a service-oriented learning experience for students to hone their clinical skills”. All patients are financially screened and must have a household income of <200% of the federal poverty level and not be eligible for other state or federally sponsored health insurance.

The DEAC Clinic is held every Wednesday evening from 6 -9 pm at the Community Care

Center, a free clinic founded by retired physicians, located 4 miles from campus in an underserved area of the community. Services include routine primary care and selected specialty clinics, including cardiology, pulmonology, dermatology, and sports medicine; laboratory; free medications on site; social services; mental health screening, screening for sexually transmitted infections, and community wellness and prevention education. During clinics, students work in varied roles including check-in, triage, phlebotomy and laboratory, pharmacy, medical interpreting, medical team, and health and wellness counseling. Student feedback indicates that they highly value the opportunity for an early exposure to actual clinical practice.

- B. **Annual Share the Health Fair:** Share the Health Fair is a one-day community health fair held in January at the Downtown Health Plaza, an outpatient facility of Wake Forest Baptist Medical Center. Screenings are provided at no charge include screenings for hypertension, diabetes, sickle cell, HIV, syphilis, glaucoma and assessment of bone density, lung function, anthropometric measures/BMI, mental health issues, balance and strength, nutrition, and risk factors for sleep apnea and stress management. Counseling is available for smoking cessation, nutrition, mental health issues. Flu shots are also given. The fair has involved as many as 185 medical and physician assistant student volunteers, 26 physicians and residents, and 20 other health care professional volunteers. It has provided ~1400 health screenings / year. Financial support for the Share the Health fair comes from grants received by the Northwest Area Health Education Center (NW AHEC), a department of the medical school. Dr. Michael Lischke has served as the faculty advisor for the project for the past five years.

C. **Boomer Annual Share the Health Fair:** The Boomer Share the Health Fair is a one-day community health fair held in the summer/fall in Wilkes County and draws populations from two additional surrounding counties -- Alexander and Caldwell. Held at the Thankful Community Center in Boomer, NC, screenings are provided at no charge include screenings for hypertension, diabetes and hyperlipidemia and anthropometric measures/BMI. Health information and education have also been provided. The initial health fair began in 2016 and has served an average of 50 community residents. Financial support for this health fair comes from grants received by the Northwest Area Health Education Center (NW AHEC), a department of the medical school.

- D. **Community Service:** Opportunities for community service are also organized and promoted through Student Government, over 30 medical student interest groups, and the Learning Communities(Houses).
- E. **Outrageous Courageous Kids:** Several opportunities are available for students to work with pediatric hematology/oncology patients. The "Outrageous Courageous Kids" program of Children's Cancer Support Services of Brenner Children's Hospital organizes Peds Pals. Medical students can volunteer to be a "big brother/big sister" for a child undergoing cancer treatment at the Medical Center. Other students work with Child Life Specialists to connect with pediatric inpatients on other services. About 10 students per year participate



in Peds Pals. Students visit the child while he/she is in the hospital and provide encouragement and companionship. Additionally, through the Pediatric Interest Group, students volunteer for monthly Ward Visits on the Pediatric Hematology/Oncology unit during which they work with children on arts and crafts projects. Approximately 10 students each month are involved in this effort.

## **6. Tracking Students**

Wake Forest School of Medicine maintains information on training and practices activities of its graduates through our Office of Alumni Affairs. Local records are kept in addition the information provided by AAMC about the status of residency training.

## **7. Office of Regional Primary Care Education**

Our 1994 report noted the School's responsibility for administration of the Northwest Area Health Education Center (AHEC). Over the years, the funding from the Northwest AHEC to support faculty and residents in the Department of Family and Community Medicine, Internal Medicine, Pediatrics, Obstetrics and Gynecology, and Psychiatry, and for medical students during their community-based primary care rotations has greatly decreased. In our current fiscal year, the residency education funds have dwindled to primarily support only the Department of Family & Community Medicine. In 1994 AHEC established the Northwest AHEC Office of Regional Primary Care Education (ORPCE) Program to support medical school initiatives in this area. ORPCE staff continues to be extremely helpful in facilitating achievement of the school's primary care education goals.

**8. Wake Forest Department of PA Studies** has been working to expand the primary care workforce for PAs in North Carolina in several ways. The PA curriculum itself has long been inclusive of primary care principles. In both the didactic and clinical portions of the program, students gain specific experience in primary care medicine. Our partnership with Appalachian State University's Beaver College of Health Sciences has created a natural network within a severely underserved geographic region of NC. In order to identify potential learners with a dedication to underserved care, the program's admission processes encourage recruits from rural and underserved backgrounds. Furthermore, while many enhancements have occurred within the formal curriculum and the admissions processes, others have occurred through our department's research and advocacy efforts.

### Admissions:

Our admissions processes consider both cognitive and non-cognitive attributes when selecting our class. In addition to a centralized application process focused on academic qualifications, we utilize a supplemental application to evaluate key non-cognitive traits in keeping with our mission. Questions answered by applicants focus on important issues such as diversity, adversity, volunteerism, and leadership. We specifically ask all applicants to describe experiences with underserved populations and whether they are interested in practicing in an underserved area in the future.

### Curriculum—Didactic and Clinical Phases:

Within the PA Program, we ensure a comprehensive primary care-based curriculum with a focus on evidence-based medicine and care for the most vulnerable populations. Overall, the curriculum is based

upon an approach to medicine from a generalist's perspective. Even when more characteristically specialized medical diagnoses are taught or presented in our case-based learning format, a holistic approach is embedded within those topics to emphasize social determinants of health and care of the underserved. Specifically, the curriculum focuses on long-term follow-up, health maintenance, preventive care and the role of primary care providers in continuity management.

Our inquiry-based learning curriculum is inclusive of care to at-risk patients in rural or underserved areas. Seventy-one percent of the case-based learning topics are centered on patients from across the lifespan in primary care settings. Of these, 22% include pediatric and 19% geriatric primary care focuses. The remaining cases cover non-geriatric adults.

Every student receives language interpreter training which includes a didactic session and a practice activity. Students and recent graduates have indicated this training was very beneficial in practices with a high volume of non-English speaking patients.

In the year-long course entitled "Patient Care", students learn the aspects of taking a history and performing physical exam techniques with the overarching emphasis on generalist approaches. Included in this course is a recurrent objective to cover health maintenance and preventive care for infants, children, adolescents, young and middle-aged adults and seniors. Coursework in our pharmacology class places emphasis on generalist prescribing over subspecialty-guided management options and algorithms. Within the past two student cohorts, a significant change in the curriculum provided at least 8 class hours on the topic of opioid use disorder (OUD) to prepare students for this ongoing public health crisis. The focus of this addition has been to prepare primary care providers who will play a pivotal role in diagnosing and treating OUD and opioid dependence. Additionally, our program's educational objectives in our clinical and diagnostic skills course maintains an overarching emphasis on the approaches a generalist provider would take to ordering and interpreting laboratory and diagnostic test and performing procedures.

Examinations during the didactic year maintain a focus on primary care in both standardized multiple choice and practical exams by including questions identified as "health maintenance". Students are instructed in, and expected to cover long-term follow-up issues on acute and chronic medical diagnoses during their standardized patient exams. They are guided to understand that, ideally, subspecialty-focused care requires a partnership with primary care providers, and that coordination of this care is inherent in the primary care scope of practice. Just prior to entering their clinical year, all PA students complete an eight-hour "Smiles for Life" module that focuses on oral and dental health knowledge and training.

Our PA students are also encouraged to participate in community services such as the Delivering Access to Care (DEAC) student-run free clinic serving uninsured, low-income residents of Winston-Salem and surrounding areas. Many of the students volunteer at the DEAC clinic as well as other free health and screening events such as the Share the Health Fair throughout their student career at Wake Forest.

During the clinical year, students are required to complete ten rotations, with four being specifically primary care focused (family practice, pediatrics, women's health, and internal medicine). Two of these prepare students to care for patients who present with common problems that can be treated in primary care practices as well as specialty areas. For the purpose of augmenting traditional primary care rotations, students must also complete four weeks of Behavioral Health to ensure they are exposed to patients with psychiatric and psychological problems which commonly present at the primary care point

of entry. An additional required four-week rotation is designed to focus on adult internal medicine and related specialties that provide students with exposure to the most common primary care presentations in major organ systems such as cardiac, pulmonary, musculoskeletal, gastrointestinal, dermatologic and ear/nose/throat. Many students choose electives in the scope of primary care practices.

All students are required to complete at least one primary care rotation in a medically underserved, health professional shortage or underserved rural area. As such, the department of PA Studies is constantly working to provide our students with a wide variety of sites in which to complete these rotations. Notably, 18% of our rotations are in rural areas, primarily in western North Carolina.

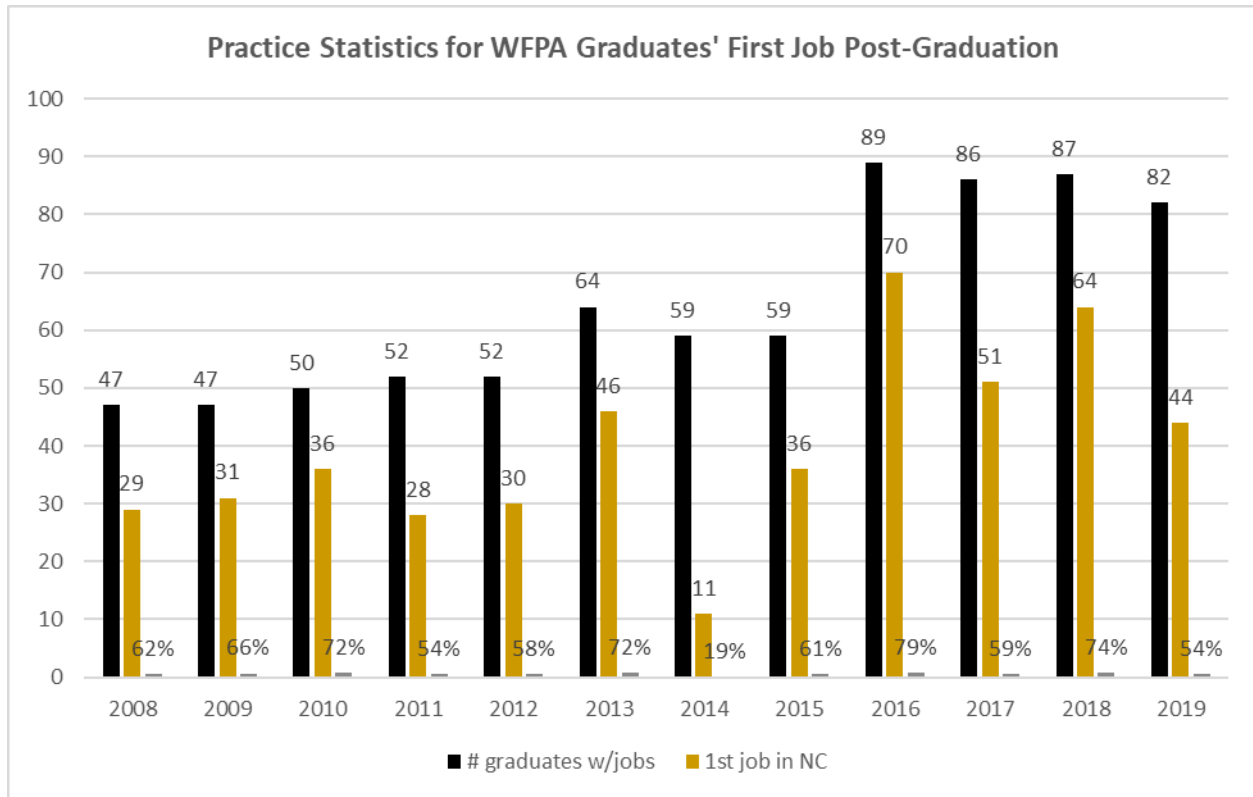
#### Strategic partnerships in the Appalachian region:

We have continued to develop our partnership with Appalachian State University (ASU) on the satellite campus in Boone, North Carolina. With the 2014 opening of this campus, Wake Forest became the westernmost PA program in the state. The work force needs assessment completed prior to establishing this campus showed significant lack of primary care providers in western NC. PAs trained in our Boone location are embedded in the community, creating a natural pipeline to employment in the Appalachian region. Three students from our most recent graduating class were hired to practice in Boone. This new campus has enabled us to improve recruitment of students interested in rural health through efforts such as engagement with the ASU undergraduate pre-PA special interest group; and has provided the opportunity for our current students to understand the health care challenges facing rural communities. This expanding ASU/Wake partnership resulted in our participation in a Golden Leaf grant awarded to Appalachian State University to improve access and chronic care through telehealth in the Appalachian community.

Ongoing curricular and external strategies along with research projects and collaborations will continue to allow our program to adopt more efficient strategies to enhance the primary care workforce in North Carolina

#### **Rate of Matriculation from North Carolina**

Matriculation Year	Total Applicants	NC Applicants	Total Matriculants	NC Matriculants
2013	1282	302 (23.6%)	61	29 (45.3%)
2014	1408	366 (26.0%)	91	57 (65.0%)
2015	1461	335 (23.0%)	90	35 (38.9%)
2016	1324	282 (21.3%)	90	41 (45.6%)
2017	1434	332 (23.2%)	88	34 (38.6%)
2018	1296	330 (25.4%)	89	46 (51.6%)
2019	1316	316 (24.0%)	90	49 (54.0%)



## **AHEC Family Practice Residency Programs**

Beyond the funding AHEC provides via the residency grants, AHEC also receives an appropriation to support a portion of the operating costs for primary care residency training for programs at the AHEC sites. In 1994 AHEC received new funding to expand training in family medicine in two ways: 1) to create new residencies, with a particular focus on programs to produce graduates likely to enter rural practice; and 2) to expand existing residencies in order to better address the needs of a growing North Carolina population. The following sections provide an update on both the new programs that were created and the expansions of existing programs.

### **AHEC Family Medicine Residency Programs**

**Charlotte AHEC:** Atrium Health has one Family Medicine residency training program, in Charlotte, Carolinas Medical Center Family Medicine Residency Program (CMCFMRP), CMCFMRP accepts 12 residents each year and has 3 tracks. The Biddle Point / Urban Underserved Track, has 9 residents (3 per year) and is located in an underserved community of Charlotte as a true community clinic. The Elizabeth / Traditional Track, in central Charlotte, has 18 residents (6 per year). The Union/ Community Apprenticeship Track has 9 residents (3 per year) and is nestled in a thriving private practice in Monroe, NC. Residents have rich learning opportunities in academic and community-based settings: Carolinas Medical Center (CMC), a large, tertiary-care medical center with residents in other specialties and 2 community hospitals, Atrium Health Union (Union Track) and Atrium Health Mercy (Elizabeth and Biddle Point Tracks). In addition, residents are training at the Charlotte VA Healthcare Center. Residents are able to care for wide variety of children and adults with complex conditions from urban and rural settings. Unique curricular and advanced training features include research, community involvement, advanced Evidence Informed Decision Making, Integrative Medicine as well as sports medicine and geriatrics fellowships.

**Cabarrus Family Medicine Residency:** The Cabarrus Family Medicine Residency Program (CFMRP) in Concord has a total of 24 residents, (3 classes of 8 residents each). The program graduated its first class of eight residents, in June 1999. Graduates enter a wide variety of practice settings including hospital medicine and full spectrum family medicine. This program is truly a “residency in a practice”. Residents are assigned to one of our four full-service family medicine practices for their three years of residency. The Cabarrus program has strong hospital training based at Atrium Health Cabarrus. CFMRP also has a sports medicine fellowship program.

**Greensboro AHEC:** Our Family Medicine Residency Program has a total of 24 residents, 8 per year. In alignment with our sponsoring institution, Cone Health, residents learn not only the latest in evidenced-based medicine but also the value equation of high-quality outcomes provided in a cost-effective, team-based approach. We partner with Triad HealthCare Network, a national leader in Next Generation ACO’s to improve the health of our communities. We focus on providing a robust experience for hospital and outpatient medicine, with an emphasis on procedural skills and point of care ultrasound necessary to current family medicine physicians’ practice needs. The presence of both Obstetrical and Sports Medicine Fellowships associated with our residency ensures our residents receive strong, cutting edge training in these areas as

well. Our residency has several internal areas of special interest including Geriatrics, LGBTQ care and Immigrant Health. We realize that work/life balance and wellness are important and that residency training is where one learns to set that balance for future success.

**Mountain AHEC:** The MAHEC Family Medicine Residency Programs in Asheville (36 residents), rural-based Hendersonville (15 residents), and rural-based Boone (18 residents with first cohort starting July 2020), provide an accredited, three-year, postgraduate education program for physicians wishing to specialize in family medicine.

MAHEC offers one-year accredited fellowships in Hospice & Palliative Medicine (4 fellows), Sports Medicine (2 fellows), Addiction Medicine (4 fellows with first cohort starting July 2020), and Surgical Critical Care (2 fellows with first cohort starting July 2021).

MAHEC also offers a one-year non-accredited fellowship in Maternal & Child Health (1 fellow) and Rural Family Medicine (no current fellows). The primary purpose of these fellowship programs is to improve the quality, quantity, and distribution of primary care physicians in Western North Carolina.

Additional residency programs which have received accreditation include: Psychiatry (24 residents) training residents in integrated primary care practice settings for three continuous years, and Surgery (25 residents) focused on training the general surgeon, predominately for rural areas.

MAHEC has applied for accreditation for an Internal Medicine Residency Program (45 residents) to begin July 2021.

Lastly, MAHEC has applied for accreditation for the following programs: Vascular Surgery (2 fellows), Child & Adolescent Psychiatry (4 fellows), Consultation Liaison Psychiatry (2 fellows), and Transitional Year (13 residents).

**South East AHEC:** The New Hanover Regional Medical Center Family Practice Residency Program, developed in conjunction with UNC-Chapel Hill and South East AHEC in Wilmington, has a total of eighteen residents, six in each of the three years. This residency was founded in the mid-1990's with the new funding AHEC received from the 1994 General Assembly, along with substantial support from New Hanover Regional Medical Center. In addition to being accredited by the ACGME, the program has recently achieved Osteopathic Recognition through the ACGME. The primary goal of the program is to increase the supply of Family Practitioners in rural, southeastern North Carolina, as well as improving the retention of primary care physicians across the state.

**Southern Regional AHEC:** The Southern Regional AHEC in Fayetteville has a total of 24 medical residents. Its mission is to train Primary Care physicians who remain in North Carolina, choose to care for the under-served, and includes a focus on rural medicine with structured experiences in rural communities. To meet these goals, recruitment is aimed at students with evidence of service to minority and rural, and patient population of all age groups. Truly integrated, the SR-AHEC residency curriculum is an experience that emphasizes inter-

professional and collaborative care in all areas of practice under a NCQA designated Level 3 Patient Centered Medical Home. Accreditation by the Accreditation Council of Graduate Medical Education with Osteopathic Recognition, and our affiliation with Duke, the Edward Via College of Osteopathic Medicine and the North Carolina Area Health Education System provides a multitude of educational resources and support to enhance our residents' education and training.

**Wake AHEC:** The Wake AHEC, in association with the Department of Family Medicine at the UNC School of Medicine, has developed training opportunities for UNC family practice residents at WakeMed. At any one time, there are 5 UNC Family Medicine residents serving rotations in pediatrics, general surgery, pediatric emergency medicine, and obstetrics-gynecology. These rotations give residents experience caring for an underserved urban community in a busy technologically advanced medical center in southeast Raleigh.

In addition to Family Medicine, WakeMed-Wake AHEC is planning an internal medicine residency program that will focus on training primary care providers for the surrounding community. WakeMed applied for and received Sponsoring Institution accreditation from the ACGME in the fall of 2019. In December, 2019, WakeMed submitted its ACGME application to host an Internal Medicine Residency Program. At full capacity, the program will host 15 general internal medicine residents (5 in each post-graduate year). These residents will spend all three years of their residency working at WakeMed-Raleigh and affiliated outpatient community sites and will hopefully stay in NC. The new WakeMed residency program will not displace any of the current residents from the WakeMed Raleigh campus.

# Nurse Practitioner Programs



## Duke University School of Nursing Efforts to Increase the Number of Students Entering Primary Care after Graduation

The Duke University School of Nursing offers three means by which students can complete programs of study that will allow them to practice as Nurse Practitioners (NPs) in primary care. Students may complete a:

- Master of Science in Nursing (MSN) degree,
- Post-graduate Certificate (non-degree) program, or
- Doctor of Nursing Practice (DNP) degree as a post-baccalaureate student.

We prepare nurse practitioners to provide primary care in the following majors: Family NP (FNP), Adult-Gerontology Primary Care NP (AGNP), Women's Health NP (WH), and Pediatric Primary Care NP (PNP). We have also added a Psych Mental Health NP program, which in many areas, is considered a vital aspect of primary care delivery. Many of our primary care NP students will also engage in additional specialty concentrations clinical focus available at Duke including: Cardiology, Endocrinology, HIV management, Oncology, Orthopedics, Palliative Care, Pediatric Mental Health, and Veterans Health. The additional specialty training has positioned many of our primary care NPs to provide care for their primary care patients with specific patient care needs while remaining in the primary care settings. The effort has ultimately increased access to evidence-based, effective healthcare while decreasing the wait and access to care for with specific diagnoses and conditions.

The NP programs in primary care at Duke have consistently included the largest applicant pools and enrollment via the FNP program. The enrollment has continued to increase over the past several years and we have gradually increased our enrollment to the primary care programs to meet the demand for primary care providers across the nation. We currently have more than 600 students enrolled in the MSN program, 65% of these are in primary care programs. We've had steady enrollment, progression and conferral of NP students in the primary care MSN degrees and Post Graduate Certificates, who have been successful in certification and highly recruited for employment as NPs in primary care settings.

We have been strategic about the growth of our NP programs due to resource limitations which include:

- Recruitment of highly qualified faculty in the face of the nursing faculty shortage,
- Tuition costs and limited student access to financial resources,
- The ongoing competition with health professional learners resulting in shortage of appropriate primary care clinical sites for clinical training/precepting (local and national issue)

We've worked to address the resource limitations through several mechanisms: Duke University School of Nursing participated in the Centers for Medicare & Medicaid Services (CMS) Graduate Nurse Education (GNE) demonstration project until 2019 to help evaluate outcomes of clinical learning using federal funding to offset the cost of clinical education (e.g. percentage of productivity loss and revenue reduction). Our partnerships during this project included collaboration with several hundred GNE clinical sites across the U.S. and building a Clinical Placement Office (CPO) within the school to assist with coordination and credentialing of NP student clinical learning sites. While the funding period has ended, we continue to learn from the experience and evaluate the outcomes. We have retained our CPO staff and have built an electronic clinical placement documentation system and productivity

tracking of the team. We have also begun to work collaboratively with Duke Health System and the Duke School of Medicine to strategically coordinate Health professional student placement activities aimed at reducing competition while ensuring all health professional learners receive appropriate learning sites and access to clinical education.

We have worked in collaboration with Duke School of Medicine to develop and support an inter-professional student-learning clinic. The clinic is open after business hours year around and is led by faculty who offer clinical learning opportunities to medical, nursing and PA students. The cases seen in this setting are adult primary-care focused.

We are completing a 5+ year Veterans Administration Nursing Academic Partnership (VANAP) with the Durham VA Medical Center. One aim of the project has been to increase the number of Adult-Gerontology Primary Care NP students who participate in clinical learning focused on Veteran Populations. The results are currently being analyzed and plans are underway to develop and disseminate a national NP training guide designed for VA clinics across the nation to enhance recruitment and training of primary care and specialty NP's in VA settings.

We have initiated conversations with nursing schools across the state who lack NP/MSN programs, to build a "pipeline" of primary care NP students. We hope to establish partnerships with underserved/rural communities across the state to enhance primary care NP's who will learn via our online education format and remain in the communities after completing graduate school. We have strategically considered schools with under-represented minority students to also enhance the workforce diversity.

We have steadily added Clinical simulation opportunities to our graduate training, thereby augmenting the face-to-face clinical learning time. We ensure all students have more than the required clinical teaching with preceptors, but have been able to offer competency-based simulation using virtual and on-campus exercises to enhance primary care skills, competency and confidence as NP's. The simulations often include an inter-professional component to enhance teamwork among healthcare providers. We have begun to implement telehealth education, simulation and for some specialties, certification. This has significant implications for the primary care providers of the future who will likely use telehealth to reach rural and underserve clients across our state.

The State of North Carolina could *greatly enhance their ability to retain primary care NP's* by enhancing incentives to serve in primary care- this includes reimbursement to NP's, endorsing the SAVE Act and providing student-loan forgiveness incentives. Considering innovations like tax-incentives to primary care providers who precept students, providing financial incentives to "master teachers" , offering Continuing Medical Education credits or other incentives are opportunities the state could consider to recruit and retain excellent primary care preceptors. ACHE across the state could promote standardized Preceptorships/Fellowships for novice NP's who seek primary care employment. Most professionals will be retained if they are offered mentoring/support in the first 15-24 months of practice and this is the standard for acute care NP's.

Respectfully submitted,

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Duke University School of Nursing MSN Program Director.

**Report to the Board of Governors  
University of North Carolina System  
And  
NC Area Health Education Center**

**Primary Care Nursing Education 2020 Update**

**College of Nursing  
East Carolina University**

**Submitted by:**

**Sylvia T. Brown, EdD, RN, CNE, ANEF  
Dean, ECU College of Nursing**

**February 2020**

## INTRODUCTION

Designated a National League for Nursing Center of Excellence and National Hartford Center of Gerontological Nursing Excellence, East Carolina University College of Nursing (ECUCON) is located in the multicultural underserved rural region of eastern North Carolina. The College demonstrates a sustained commitment to promote the health of citizens of North Carolina through the provision of a nursing workforce skilled at providing primary care. Since its inception in 1959, our College of Nursing graduates have worked to improve the health of North Carolina residents through nursing education, research, and practice. While the CON prepares the largest number of baccalaureate generalists in the state, it is the master's and doctoral prepared advanced practice specialists that are educated to deliver primary nursing care. The Master of Science in Nursing (MSN) program includes Nurse Midwifery (NM), Neonatal Nurse Practitioner (NNP), and Psychiatric Mental Health Nurse Practitioner (PMHNP) concentrations. The Doctor of Nursing Practice (DNP) program includes specialty focus in either Family Nurse Practitioner (FNP), or Adult-Geriatric Primary Care Nurse Practitioner (AGPCNP) who provide primary care.

Although the ECUCON educates other advanced practice nurse clinicians (nurse anesthetists, and clinical nurse specialists) as well as nurse educators and nurse leaders in the MSN and DNP programs, and the PhD program prepares researchers/educators/clinicians, this report provides NC AHEC and the UNC Board of Governors with a description of our efforts to maintain the number of primary care providers in the state of North Carolina.

### **HRSA Funded Project to Increase Primary Care Workforce**

In June 2019, the College of Nursing received a \$2.798 million HRSA grant (Dr. Pam Reis-PI). The purpose of the Advanced Practice Registered Nurse (APRN) Academic-Clinical Practice Collaborative at East Carolina University College of Nursing (ECUCON) is to significantly strengthen the availability and capacity of the APRN primary care workforce in rural and underserved communities in Eastern North Carolina (ENC). The innovative collaboration of students in three APRN concentrations – nurse practitioner (NP), nurse midwife (NM), and clinical nurse specialist (CNS) will occur through joint long-term clinical placements in rural and underserved clinics through our established community clinical partner Vidant Health (VH). We will enhance our collaboration with the NC Agromedicine Institute (NCAI) to prepare students in the evidence-based care of ENC residents, including farmers, fishermen, and loggers. Our partnership with East Carolina University Center for Telepsychiatry and E-Behavioral Health (ECU CTeBH) will provide telehealth learning experiences for students. Preceptor development will be advanced through our community partner, Eastern Area Health Education Center. Through these collaborations, a new model of CNS education and practice will emerge that prepares CNS graduates in NC for employment in primary care settings.

The HRSA ANEW award will transform the APRN workforce through a newly created scholars program designed to enhance clinical excellence in rural health, develop leadership capacity for delivering high quality evidence-based healthcare, and promote employment in rural communities following graduation. The APRN **Rural and Underserved Roadmap to Advance**

Leadership (RURAL) Scholars Program provides each student receiving traineeship funds with 1-2 semesters of clinical placement in rural communities through our clinical partner, VH; trains students in telehealth with a focus on telepsychiatry through the ECU CTeBH; and provides opportunities for improving the health of farmers, loggers, and fishermen and their families through the NCAI. APRN RURAL Scholars will commit to two years of employment in rural/underserved communities for each year of support.

**The Project goals are:** (1) Establish and enhance academic-clinical partnerships with VH, the NCAI, and the ECU CTeBH; (2) Recruit and train a minimum of 16 APRN preceptors in partnership with VH; (3) Create eight longitudinal clinical placement sites in rural and underserved communities through VH; (4) Provide traineeship funds to at least 84 full- and part-time NP, NM, and CNS students; and (5) Implement the innovative APRN RURAL Scholars program to advance clinical and leadership skills, capacity, and investment in providing primary care in rural and underserved communities. ECUCON is well-positioned to significantly impact the APRN primary care workforce in NC and is home to the only NM and CNS programs in NC. **A statutory funding preference and special consideration was awarded because this project will substantially benefit rural or underserved populations, and all training sites are in HPSAs.**

## **ECUCON PROGRAMS IN PRIMARY CARE**

### ***Nurse Midwifery Concentration***

The nurse-midwifery education program at East Carolina University College of Nursing (ECUCON) began in 1991 and is the only nurse midwifery program in North Carolina and one of only 37 accredited programs in the nation. The Certified Nurse-Midwife (CNM) is an individual educated in two disciplines: nursing and midwifery. The CNM graduates with a basic set of skills and behaviors described in the *Core Competencies for Basic Midwifery Practice* which includes the provision of primary health care for women from adolescence through post menopause. The CNM is also prepared to care for the newborn in the first 28 days of life. According to the American College of Nurse Midwives Position Statement on midwives as primary care providers (2012), “CNMs are recognized as primary care providers under existing federal health care programs, including those that address primary care workforce expansion, reimbursement for services, and loan repayment programs.” Midwifery education is based on an understanding of health sciences theory and clinical preparation that shapes knowledge, judgment, and skills deemed necessary to provide primary health care management to women and newborns. Therefore, the use of CNMs as primary care providers is integral to the success of the healthcare workforce.

The nurse-midwifery concentration admits 12-14 students per year from North and South Carolina with the majority from NC. The ECUCON nurse-midwifery concentration started accepting students from SC due to the closure of the midwifery education program at Medical University of South Carolina. We currently have 36 students enrolled in the Nurse Midwifery concentration of the MSN program and 2 post-master’s certificate students. Since Spring 2018,

ECUCON awarded 19 Nurse Midwifery MSN degrees and 3 post-master's certificates, and 10 more students of this concentration are expected to receive their MSN degrees in Spring 2020.

### **Admission Criteria for Midwifery Applicants**

- A baccalaureate degree in nursing from a nationally accredited nursing program.
- A minimum of one year of experience as a RN (preferably in Labor & Delivery)
- Grade-point average of 3.0 on a 4.0 scale in undergraduate nursing.
- Acceptable score on the Graduate Record Examination (GRE) within the past five years. GRE requirement is waived for those who have (1) completed a prior graduate degree at an accredited institution, (2) completed 9 or more semester hours of graduate course work with a grade of B or higher in each course at an accredited institution, or (3) have a minimum GPA of 3.2 (on a 4.0 scale) in their accredited baccalaureate nursing program.
- Currently non-restricted license to practice as a registered nurse (RN) in North Carolina or a NCSBN-compact state. Out-of-state applicants are only accepted from South Carolina.
- Written statement of purpose describing the applicant's interest in graduate study, career goals, and the MSN degree's relationship to those goals.
- Three professional references
- Current resume
- A personal interview with a member of the midwifery faculty
- Demonstrate a commitment to practice with underserved populations.

### **Curriculum Focus on Primary Care**

The midwifery program has a 3-credit hour course (Nurs 6119) titled "Introduction to Primary Care for the Well Woman" with a clinical rotation of 90 hours. This is the first clinical course the midwifery students take. Primary care content is threaded throughout the curriculum.

### ***Neonatal Nurse Practitioner Concentration***

The neonatal nurse practitioner (NNP) program at the East Carolina University College of Nursing is one of thirty-four NNP programs offered nationally, and of that total, one of twenty-one programs offering a fully online curriculum. At present, East Carolina University's NNP program is one of the five largest NNP programs in the nation, with increasing enrollment demand. East Carolina University NNP graduates successfully matriculate through population-specific courses in order to accrue knowledge and skills necessary to provide safe, high-quality care to neonates, infants and the family across the health care continuum.

The nationally board certified NNP participates in a wide variety of complex patient care activities in settings that include, but are not limited to, all levels of neonatal inpatient care in both academic- and community-based settings; transport, acute and chronic care; delivery room management; and primary care settings (NANNP, 2014). Inpatient NNPs focus on restorative care characterized by rapidly changing clinical conditions, including unstable chronic conditions, complex acute illnesses, and critical illnesses (NANNP; 2014; NONPF, 2004). NNPs functioning in the outpatient setting "focus on comprehensive, continuous care and coordination of services, characterized by a long-term relationship between the patient and PCNP (NONPF, 2011).

Increasing focus has been placed on promoting the utilization of the NNP congruent with the full scope of the clinician's education, certification, services performed, and population served, not setting or location (NANNP, 2014; NONPF, 2012). We currently have 36 students enrolled in the Neonatal Nurse Practitioner MSN program and 1 enrolled in the NNP post-master's certificate program, which represents an average 3-fold enrollment increase (2013-present). Since Spring 2018, ECUCON has awarded 27 Neonatal Nurse Practitioner MSN degrees and 4 Post Master's Certificates. Twelve more students of this concentration are expected to receive their MSN degree in Spring 2020.

**General requirements are:**

- A baccalaureate degree in nursing from a nationally accredited nursing program.
- A minimum GPA of 2.7 in undergraduate studies and a minimum GPA of 3.0 in nursing major.
- Acceptable score on the Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) within the past 5 years. \*
- Current non-restricted license to practice as a registered nurse (RN) in North Carolina or a NCSBN-compact state. NNP students must have a license in the state they plan to do their clinical practice.
- Two years of full-time clinical practice experience (within the last 5 years) as a registered nurse (RN) in the care of critically ill neonates or infants in critical care inpatient settings.
- Two professional references, with at least 1 reference from a NNP or neonatologist. One reference must be from a health care provider knowledgeable about the applicant's nursing practice.
- A written statement describing the applicant's interest in graduate study, career goals, and the MSN degree's relations to those goals.
- A course in statistics with a grade of "C" or higher and computer literacy are pre-requisites for all concentrations in nursing.

*The GRE & MAT admission entrance exams can be now be waived for the NNP concentration with proof of one (1) of the following: current and unexpired RNC-NIC certification, CCRN-Neonatal certification, active membership in the Sigma Theta Tau Honor Society of Nursing, or professional work experience at discretion of program director. Applicant must submit ONE proof or ONE score with application. \**

*The neonatal nurse practitioner concentration increased its enrollment cap to eighteen students per graduating class, effective Fall 2016, based upon an ever-increasing volume of applicants and number of available, actively practicing, and certified neonatal nurse practitioner faculty. Of the total number of students admitted, 60% are typically residents of North Carolina and 40% out-of-state. Currently 67% of enrolled students are NC residents.*

***Psychiatric Mental Health Nurse Practitioner Concentration***

The psychiatric mental health nurse practitioner (PMH NP) is new to ECU College of Nursing. The first class was admitted in the fall of 2017. This specialty concentration was one of only two offered by the UNC system and the only one offered online at that time. Two track options are

available, the MSN degree and the Post-master's Certificate. The need of this specialty has grown significantly during the last few years. North Carolina is experiencing a mental health and substance use crisis with three counties ranked within the top 10 list nationwide for opioid use and overdoses. Ninety-five out of the 100 counties have a critical shortage of mental health prescribers. Psychiatric Mental Health Nurse Practitioners diagnose, treat, and educate those affected by mental health and substance use disorders and are critical in ensuring this marginalized and vulnerable population receive accessible and quality care. PMH NP education includes competencies in neurophysiology, psychopharmacology, psychotherapy, somatic therapies, and interpersonal theory; as well as integration with primary care practice. These competencies are congruent with professional nursing standards and include *The Essentials of Master's Education in Nursing* (AACN, 2011), *Criteria for Evaluation of Nurse Practitioner Programs* (NTF, 2012), *National Organization of Nurse Practitioner Faculties Core Competencies* (2012), *Psychiatric Mental Health Nurse Practitioner Competencies* (NONPF, 2013), and *Psychiatric Mental Health Nursing: Scope and Standards of Practice* (American Psychiatric Nurses Association, 2014). Extensive clinical practicum components totaling 550 hours are required with specific patient population foci. Priority admission status includes those with psychiatric nursing experience and those who plan to practice as PMH NP's upon graduation. Out of state applications are not accepted at this time due to the critical need in North Carolina.

Since admitting the first student cohorts in the fall 2017, we have had 12 post masters and 6 MSN students graduate. We have a 100% pass-rate on first attempt PMHNP boards. Twenty-nine students are currently enrolled in the Psychiatric Mental Health Nurse Practitioner concentration with 20 in the MSN track and 9 in the post-master's certificate. Thirteen students are on schedule to graduate by fall 2020.

### **Admission Requirements**

- A baccalaureate degree in nursing from an accredited program
  - A minimum GPA of 3.0 in nursing major
  - Acceptable score on the Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) within the past five years
  - Current, non-restricted license to practice as a registered nurse (RN) in North Carolina
  - One-year experience as a registered nurse (RN)
  - Three professional references with at least one reference from a nurse practitioner
  - A statement of purpose essay describing the applicant's interest in graduate study, career goals, and the specific pursuit of this specialty
  - A current resume
  - A personal interview with a member of the PMH NP faculty
  - A course in statistics with a grade of "C" or higher
- 
- *The GRE & MAT admission entrance exams may now be waived for the PMHNP concentration if an applicant has (1) completion of a prior undergraduate or graduate degree from an accredited institution, (2) completion of 9 or more semester hours of*



*graduate course work with a grade of B or higher in each course from an accredited institution, or (3) a minimum GPA of 3.2 (on a 4.0 scale) in an accredited baccalaureate nursing program.*

### ***BSN to DNP (Family Nurse Practitioner and Adult Gerontology Primary Care Nurse Practitioner)***

The Doctor of Nursing Practice (DNP) degree is a practice-focused terminal degree earned by specialists in advanced nursing practice. The DNP is offered online and focuses on developing nursing experts in translating and applying research findings into clinical practice rather than in generating new knowledge. The DNP is offered as a post-master's option as well as a post-baccalaureate (BSN to DNP) option. The post-master's DNP curriculum can be completed in 36 semester hours and expands the competencies of the advanced practice registered nurse (APRN) from the master's level to encompass knowledge required as nurse leaders in increasingly complex healthcare systems to assess published evidence informing practice, improve systems of care to improve healthcare outcomes, and to make changes to enhance the quality of care. Beginning fall 2016, applicants who have an earned MSN in Nursing Leadership or Nursing Administration are admitted to the post-master's DNP program. The post baccalaureate DNP curriculum offers specialty foci options initially limited to the adult gerontology primary care nurse practitioner (AGPCNP) and family nurse practitioner (FNP) foci. The AGPCNP program of study requires 63 semester hours inclusive of 720 clinical practice hours while the FNP program of study requires 70 semester hours inclusive of 720 clinical practice hours. The post-BSN to DNP program admits approximately 25 students each year in the adult-gerontology primary care nurse practitioner (A-GPCNP) and family nurse practitioner (FNP) specialty foci options, respectively. Preference is given to those who demonstrate a capacity for creative inquiry, critical thinking, scholarship, and leadership. In the case of equally qualified applicants, preference will be given to individuals who intend to pursue doctoral study on a full-time basis. We currently have 153 students enrolled in the post-BSN DNP Program. Since 2018, ECUCON has awarded 56 post BSN-DNP degrees, with 33 additional students expected to matriculate in spring 2020.

### **Admission Criteria**

- A baccalaureate or higher degree in nursing from a nationally accredited nursing program.
- A minimum of one year of experience as a RN within one year of the application deadline.
- Grade-point average of 3.2 on a 4.0 scale on all graduate work.
- GRE Waiver (with GPA above 3.4) or acceptable score on the Graduate Record Examination (GRE) within the past five years.
- Currently non-restricted license to practice as a registered nurse (RN) in North Carolina or a NCSBN-compact state. International applicants must work with the Commission of Graduate of Foreign Nursing Schools to validate credentials before applying for RN licensure.

- Satisfactory performance on Test of English as a Foreign Language (TOEFL) scores where English is not the first language. Students on foreign student visas must present evidence of professional standing in their respective countries.
- Successful completion of a graduate statistics course which includes inferential statistics within the past five years is recommended.
- An undergraduate research course.
- Basic Computer competency with proficiency in development and use of databases, patient information systems, statistical sets, and use of various statistical packages for data analysis.
- Written statement of personal career, educational, and scholarship goals; identification of practice interests, leadership goals and match with program goals.
- Three written professional references from individuals with expertise to comment on the applicant's capability for doctoral scholarship (for example, university professors, employers) - At least one of the references must be from a doctorally prepared nurse.
- A current curriculum vita.
- A representative E-portfolio limited to no more than 25 pages demonstrating evidence of professional practice accomplishments, community service and scholarship. This must also be submitted electronically through the university graduate school application portal.
- An online interview via Interview Stream to include a discussion of the student's practice interests/career goals and research.

### ***Post Master's DNP Program***

The post-master's DNP program admits approximately 20 students each year. Applicants are evaluated in five areas: GPA, GRE, references, essay, and interview. Completed applications are considered in a competitive review process. Preference is given to those who demonstrate a capacity for creative inquiry, critical thinking, scholarship, and leadership. In the case of equally qualified applicants, preference will be given to individuals who intend to pursue doctoral study on a full-time basis. We currently have 16 students enrolled in the Post Master's DNP Program. Since Spring 2018, ECUCON awarded 18 post-master's DNP, and 12 more students of this program are expected to receive their DNP degrees in Summer 2020.

### **Admission Requirements for the Post-Master's DNP**

- One official transcript from each college or university attended.
- A master's degree in nursing in an advanced practice registered nursing (APRN) specialty (nurse anesthesia, clinical nurse specialist, nurse midwifery, nurse practitioner) with evidence of completion of graduate level pathophysiology, pharmacology and advanced physical assessment courses from an accredited school. Certification as an APRN (if applicable).
- The applicant must meet all other requirements described previously in the BSN to DNP section.

### ***Clinical Nurse Specialist***

The ECUCON offers 2 CNS education programs: Adult-Gerontology Clinical Nurse Specialist (AGCNS) and Neonatal CNS. The AGCNS program prepares nurses for APRN roles in complex care settings. The National Association of Clinical Nurse Specialists Adult-Gerontology CNS Competencies are the basis of the AGCNS curriculum. Emphasis is placed on providing students with advanced theoretical knowledge and practice skills needed to improve patient care. The AGCNS concentration prepares students in the roles of clinician, educator, clinical consultant, researcher, program planner, and leader. The CNS program is offered in 100% distance learning format. The 43-semester-hour program includes core courses, clinical core courses, and concentration specialty courses.

Because there is not currently significant utilization of the CNS role in primary care settings, a partnership between the academic program and specified clinical sites will provide an opportunity to better identify the best application of the CNS role and expertise towards challenges for rural primary care populations. While there may be some overlap in areas of focus (e.g., translation of evidence to practice, implementation of guidelines and protocols), this will be a new role in NC and thus a strong initial relationship will help ensure appropriate educational preparation for CNS students in the program. This specialty has not been included in previous reports, since primary care was not a specific focus; however, with the HRSA grant, this will now be an enhanced part of the curriculum.

There are no CNSs in practice in rural, primary care settings in NC because the role originally developed in acute care hospitals, and NC legislation does not currently support the CNS as an APRN role (though the NC Board of Nursing does recognize the CNS role). Initial activities will be focused on: (1) Increasing knowledge and awareness of CNS practice by current primary care providers, nurses, and administrators; (2) Increasing CNS faculty knowledge of rural primary care populations, clinical operations, and most pressing clinical needs/gaps, including care transformation; and (3) Identification of potential areas of CNS impact for adult-gerontology populations in rural, primary care with the intent to establish the need for CNSs as primary care stakeholders. Emphasis will be on critical outcome metrics, access to care, community/population gaps, and health impacted by social determinants of health. In spring 2020, there are 34 students enrolled in the AGCNS and 7 Post-Master's AGCNS and in the NCNS there are 3 students enrolled and 3 in the Post-Master's NCNS.

### **Admission Requirements**

- A baccalaureate degree in nursing from an accredited program
- A minimum GPA of 2.7 in undergraduate studies and a minimum GPA of 3.0 in nursing major
- Acceptable score on the Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) within the past five years
- Current, non-restricted license to practice as a registered nurse (RN) in North Carolina or an NCSBN-compact state

- Two years' experience as a registered nurse (RN)
- Three professional references with at least one reference from a nurse practitioner
- A statement of purpose essay describing the applicant's interest in graduate study, career goals, and the specific pursuit of this specialty
- A current resume
- A personal interview with a member of the graduate faculty
- A course in statistics with a grade of "C" or higher

## **PRECEPTOR/MENTORING ACTIVITIES**

Preceptor and mentoring activities are an integral component of all programs focused on primary care at ECU. The focus of these activities is to provide students the opportunity to work closely with practicing experts in the discipline. ECU faculty work closely with preceptors to ensure optimal results. Examples of activities:

- Preceptors receive online education/orientation for successful mentoring relationships.
- Faculty visit students and preceptors at clinical agencies to foster relationships and verify student learning outcomes.
- UNC Online Mentoring Services are available
- Communication with preceptors occurs several times throughout the semester through weekly evaluations, phone calls and e-mails.
- An e-mentoring program for midwifery students has been developed. This initiative links current midwifery students to practicing midwives, providing them an opportunity to connect with experienced practitioners who can provide real-world advice about midwifery practice.

## **RESEARCH IN PRIMARY CARE**

Areas of current faculty research include, but are not limited to the following areas in primary care:

- Advanced Nursing Education Workforce HRSA grant (ANEW) to increase primary care experiences of NP, CNS, and Nurse Midwifery students
- Strategies to affect resistant hypertension
- Intervention to decrease neuropathic pain after lower leg amputation
- Disaster preparedness and resilience
- Disparities in lung cancer outcomes in eastern NC
- Palliative care intervention for Latinos with cancer
- Medication adherence for women with HIV
- Preventing recurrent myocardial infarction
- Health concerns of rural populations, particularly those persons employed as farmer, fishers, and loggers

- Affecting risky behavior and reducing sexually transmitted diseases in adolescents
- Care for bereaved families after death of a child

## **IT SERVICES**

Information technology services are offered from dedicated staff within the College of Nursing. This department serves as much more than technical support for faculty and students; they are often partners in research and development. This partnership developed and implemented a novel virtual clinic to simulate diverse learning scenarios reflected in culturally diverse clinical settings.

The CON has eight state-of-the-art Concepts Integration Laboratories (CIL). The CIL fosters excellence in the preparation of professional nurses by assisting students of all levels to integrate nursing science concepts and critical thinking skills in the practice of quality patient care. The structured and open laboratory experiences assure that nursing students have access to basic and advanced learning technologies which enable them to competently perform essential nursing interventions in diverse healthcare environments.

## **SELF-DIRECTED LEARNING ACTIVITIES**

ECU students are afforded the opportunity to learn in ECU's Office of Clinical Skills Assessment and Education (OSCAE) in the physical assessment course as well as the clinical courses. Standardized patients are used as an objective measurement of student learning outcomes in the diagnosis and treatment of common primary care illnesses. The OSCAE staff are also partners in the implementation of Interprofessional Education.

## **COLLABORATIVE EFFORTS WITH LOCAL COMMUNITIES**

In addition to the other community/clinical resources students complete immersive clinical rotations in rich, primary care settings where they receive experience in the management of primary care and multiple chronic conditions (MCC). Examples included but are not limited to James D. Bernstein Community Health (JDBCHC), Goshen Medical Centers (GMC) and Robeson Health Care Corporation (RHCC). All of these clinical agencies are established Federally Qualified Health Centers (FQHCs) where low-income, uninsured, or medically underserved rural families can receive care on a sliding fee scale. These FQHCs have an established track record of partnering in the clinical education of students from ECUCON, Brody School of Medicine, College of Allied Health Sciences, Medical Family Therapy, Social Work, and Dentistry, and in these agencies students learn collaboratively in the management of MCC in primary care. The partnerships with JDBCHC, GMC and RHCC are examples that strengthen the diversity of our community linkages.

The ECUCON provides two faculty to provide gynecology and prenatal care as part of their faculty practice at Pitt County Public Health Center; 1 day a week and 2 days a month, respectively. This faculty practice is used throughout the year as a gynecology and antepartal clinic site for family nurse practitioner students and nurse midwifery students.

## **CHALLENGES**

While the CON's growth and expansion has been limited in recent years by state budget reductions, we have successfully established a DNP program and an online family psychiatric/mental health nurse practitioner option in the MSN program while maintaining our enrollment in primary care concentrations. Since the last report of 2018, the enrollment in the specialty population focus areas of advanced practice nursing has grown by 5% from 260 students in spring 2018 to 273 in spring 2020. Challenges remain in obtaining clinical site placements due to the increasing number of schools providing payment for preceptors and clinical sites and increasing competition from online programs that are based outside of NC but have students from NC enrolled in their programs. An additional challenge is the need for qualified faculty while experiencing a nationwide nursing faculty shortage compounded with no salary increases for several years. For FY 2021 the College of Nursing will receive a permanent budget reduction of 4.74%, which will be challenging as we strive to meet the nursing workforce needs in our state.

## **CONCLUSION**

This 2020 report from the ECU College of Nursing demonstrates our commitment to preparing advanced practice nurses that will help to meet the healthcare needs of citizens in our region and state. The market demand for advanced practice nurses continues to rise as our population ages, and the nursing workforce ages. With the vast needs in our rural communities in eastern NC, comes a greater responsibility to provide services to fulfill our mission to serve as a national model for transforming the health of rural underserved regions through excellence and innovation in nursing education, leadership, research, scholarship, and practice. We remain committed to this mission as we prepare a workforce to meet the healthcare needs our citizens.

**Gardner-Webb University**  
**Hunt School of Nursing**  
**MSN – Family Nurse Practitioner Program**  
**DNP- Family Nurse Practitioner Program**  
**Primary Care Report for NC AHEC**  
**March 2020**

Submitted by Anna S. Hamrick, DNP, FNP-C, ACHPN, Chair, Doctoral Nursing Programs  
Upon request from by Tracy Arnold, DNP, RN, Dean of the Hunt School of Nursing

1. Program Overview:

The Hunt School of Nursing (HSON) consists of four programs. – Associate Degree in Nursing (ADN), Bachelor of Science in Nursing (BSN), Master of Science in Nursing (MSN) and the Doctor of Nursing Practice (DNP). The BSN includes the traditional (TBSN), Accelerated BSN (ABSN) and RN completion (RN-BSN) tracks. The MSN program includes the nurse education, nurse administration, and family nurse practitioner (FNP) tracks, and the MSN/MBA dual degree program. The DNP program includes the post-masters entry with a focus on leadership development and as of Fall 2019, a post-baccalaureate entry DNP – Family Nurse Practitioner and DNP – Psychiatric Mental Health Nurse Practitioner option. GWU School of Nursing maintains continuing accreditation from the American Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA, 30326, 404-975-5000.

The Hunt School of Nursing is a part of the College of Health Sciences which includes the HSON, Physician Assistant Studies Program, Athletic Training Program and Exercise Science Program. All programs share teaching space and state of the art simulation labs.

The MSN – Family Nurse Practitioner (FNP) and Post-Masters FNP certificate programs were added to the curriculum offerings in 2013. The first graduating class was in May 2015, we have now graduated 5 cohorts, totally 149 FNP alumni.

MSN FNP courses are offered in a hybrid format with at least 50% of contact being on campus in Boiling Springs, NC. Students attend 4-6 campus days per semester typically scheduled on Fridays and/or Saturdays. The MSN – FNP program requires 51 credit hours for completion and the Post Masters FNP Certificate requires 36 credit hours. The MSN-FNP program is in a phase out as it transitions to the DNP-FNP. The last cohort of MSN-FNP students is scheduled to graduate in May 2021.

Students are required to have 630 direct patient care hours with a preceptor prior to completion of the program. Clinical practicums are organized with preceptors including Nurse Practitioners, Physician Assistants, MD/DO, and Certified Nurse Midwives. Preceptors are from a variety of settings in North Carolina, South Carolina, and Kentucky. A Clinical Site Specialist position was added in January 2016 to help facilitate practicum experiences for Family Nurse Practitioner students as well as the Gardner-Webb University School of Physician Assistant Studies.

The post-baccalaureate entry Doctor of Nursing Practice – Family Nurse Practitioner began in fall 2019. DNP-FNP courses are offered online with a one week on campus intensive session each semester. The DNP-FNP program is 79 credit hours and can be completed as a full-time student in 8 semesters. 640 direct patient care hours are included in the curriculum and spaced over 5 clinical practicum courses, Common & Acute, Reproductive Health, Chronic & Complex, Pediatrics, and Transition to Practice.

## 2. Enrollment

Admissions applications are accepted and reviewed in spring for fall cohort enrollment. Interest in the FNP program and application yield has been competitive. The last cohort of the MSN-FNP program was admitted in Fall 2018. Beginning fall 2019, admissions were to the DNP-FNP program. The DNP-FNP program is capped at 30 students. In 2019, 45% of applicants were offered acceptance. In 2018, 51% of applicants were offered acceptance.

### **Post Baccalaureate Doctor of Nursing Practice Program Details**

- DNP-FNP - 79 Credit Hours
- Full time students can complete in 8 Semesters
- Courses are offered online with on-campus sessions once per semester
- \$795/credit hour
- Clinical practicums are arranged in student's home region with assistance of Clinical Site Specialist

### **DNP-FNP Admission Requirements:**

#### **Academic History**

- GPA of 3.0 or higher on 4.0 scale on all undergraduate work or last 64 hours of undergraduate or graduate work
- Official Transcripts from all institutions attended
- Baccalaureate degree in nursing from a regionally accredited institution with a nationally accredited nursing program
- RN applicants with a baccalaureate degree in another field may be accepted but must meet additional requirements prior to admission.
  - o The requirements include completion of an undergraduate or graduate statistics course, BSN-level nursing research course, BSN-level communication skills in nursing course. A grade of "C" or higher must be earned in each course in order to meet requirements.



### Licensure and Experience

- Current, unrestricted Registered Nurse licensure in United States
- Updated resume
- Two years of active RN practice with a minimum of 1100 hours per year. Active RN experience must have taken place within the past 3 years with a Statement of Description of Work Experience;
- Three completed professional references submitted on “Graduate Study Reference” Forms
  - o References may be from past or current professors, supervisors, or professional colleagues. The references should attest to your potential for success in the DNP program, including preparation, initiative, and aptitude, and commitment to the profession.
- Current, official, satisfactory Criminal Background Check results from the current state of residence any another state lived in during the past ten years
- Immunizations as required by the University

### Current Enrollment (as of 3/23/2020):

All currently enrolled students are residents of primarily North Carolina and South Carolina.

Semester Admitted	Type of Enrollment	Currently Enrolled	Planned Graduation
August 2017	MSN – FNP	24	May 2020
January 2017	Post Masters FNP Cert	4	May 2020
August 2018	MSN – FNP	18	May 2021
January 2019	Post Masters FNP Cert	5	May 2021
August 2019	DNP-FNP	31	May 2022
		<b>82 FNP Students</b>	

### 3. Program Opportunities and Challenges

Clinical Site Placement: Family Nurse Practitioner students are prepared for entry level into primary care practice. However due to increasing demands for clinical preceptors the challenge of placing students in appropriate clinical practicum sites exists each semester. Specific clinical practicum rotations in pediatrics and women’s health are scarce. Development of clinical training sites for pediatric and gender specific needs attention. We have dedicated one FTE who

works with all clinical placements and student credentialing. She works 40 hours per week in collaboration with clinical sites and students and her only focus is on clinical placement for Nurse Practitioners.

Although it is still not the national norm for nurse practitioner education to pay preceptors, the question is being asked from our clinical partners is becoming more common. One clinical partner which is our largest health system charges \$500 per preceptor for 1 – 240 clinical hours and \$1000 per preceptor for 241-500 clinical hours. We have had situations where preceptors refused to precept our NP students because we did not pay like MD and PA programs do.

The transition to payment for preceptors is still frowned upon by national leaders in NP education. And we do note that the additional cost will be a barrier with direct impact to students. At this time we have not required students to directly pay preceptors and have allowed for this in our budget but ultimately it increases tuition.

## **The University of North Carolina at Chapel Hill School of Nursing**

### **Primary Care Nurse Practitioner Preparation and Productivity**

#### **Overview of Programs:**

The School of Nursing (SON) at UNC-Chapel Hill prepares primary care Nurse Practitioners (NPs) via three programs: Master of Science in Nursing degree (MSN), Post-Master's Certificate Program (Post-MSN) and the BSN to DNP pathway of the Doctor of Nursing Practice degree (DNP).

**Master of Science in Nursing (MSN).** The MSN NP program educates BSN prepared nurses for primary care roles in varied rural and urban settings, including: ambulatory clinics, home health care agencies, long-term care facilities, retail clinics, nurse managed clinics/practices, and physician managed private medical practices. Students are educated to deliver culturally sensitive primary care services as Adult-Gerontology, Family, Pediatric-Primary Care, or Psychiatric-Mental Health Nurse Practitioners. Full-time study in the MSN NP program ranges between 40-46 credit hours taken across two academic years and one summer.

The MSN program builds upon the advanced practice core curriculum originally outlined in The American Association of Colleges of Nursing's Essentials of Master's Education (AACN, 2011) <http://www.aacnnursing.org/Education-Resources/AACN-Essentials>. To coincide with IOM recommendations, the curriculum prepares graduates to provide care based on continuous healing relationships, patient needs and values, honoring the patient's control of his/her own health, shared provider patient knowledge and communication, evidence-based decision making, transparency, anticipation of patient needs, safety, cost containment, and cooperation among clinicians. MSN NP students complete core courses on professional issues, research and evidence appraisal, advanced clinical skills, and advanced specialty knowledge related to their population track.

All students are prepared to provide primary care services within a community perspective. NP graduates are prepared to diagnose, order, and interpret diagnostic tests; order and provide therapeutic interventions and medications; provide health teaching and counseling; and collaborate with patients, families, and other health professions. They also learn about community resources as well as legal, ethical, diversity, health disparities, health literacy, socioeconomic and political issues related to the NP role. MSN NP students take courses in advanced pathophysiology, advanced health assessment, advanced pharmacotherapeutics, clinical management of acute and chronic illness, population health and epidemiology, and health promotion and disease prevention. Student clinical preceptorships are in primarily

underserved and disadvantaged areas that commonly provide inter-professional collaborative learning opportunities. All clinical sites and preceptors are evaluated each semester through faculty clinical site visits as well as faculty and student written feedback. Clinical sites and preceptors that are evaluated by students and faculty as providing relevant and positive learning experiences are retained for future clinical learning opportunities.

**Post-Graduate.** Post-graduate certificate programs are designed to prepare nurses who have already earned a MSN (or higher) degree to assume a new advanced practice role and responsibilities not covered in their initial nursing graduate education. The NP population areas are the same as in the MSN program. Post-graduate course and clinical requirements vary based on previous credits earned and previous area of specialization, but generally require a minimum of one year fulltime study (typically, 20 to 30 credit hours).

**Doctor of Nursing Practice.** The BSN to DNP program of study builds on baccalaureate education and expands current MSN education to prepare nurses for clinical leadership, practice inquiry, and advanced nursing practice as a primary care NP (<http://www.aacnnursing.org/Education-Resources/AACN-Essentials>). DNP program students complete all courses described above for the MSN and receive additional preparation in such key areas as evidence-based practice, systems leadership, population health, patient safety, and translational research with the goal of improving population health status and outcomes. These students complete 3 years of full-time study, ranging from 63 to 75 credit hours depending on advanced practice preparation area.

Students are prepared as primary care NPs in the same population foci as the MSN students: Adult-Gerontology, Family, Pediatric, and Psychiatric-Mental Health. BSN to DNP students are required to complete 1,000 practice hours (minimum of 500-600 direct care, 400-500 DNP Project) along with additional coursework in nursing leadership and practice-based inquiry. Students will become experts at evaluating and translating evidence into effective changes at the population level. These changes enhance the outcomes of care, effectiveness of care delivery, and reduce health disparities. All BSN to DNP students must complete an evidence-based practice project (DNP Project) that addresses an identified clinical need related to advanced nursing practice and must benefit a group, population or community rather than an individual patient. These projects often arise from clinical practice and may be done in partnership with a clinical agency, organization, or community group.

### **Admission Criteria**

BSN to MSN and BSN to DNP applicants must be licensed as a Registered Nurse, have a minimum of one year clinical nursing experience, have an earned nursing GPA of 3.0, submit

academic and employment letters of recommendation, and prepare a professional statement exploring professional history, contributions, goals for graduate study, and career plans.

Admission and graduation data: We have been quite successful in recruiting strong students to the NP programs and increasing admissions when budget and clinical practice sites could support additional capacity. We are also graduating high numbers of NPs who enter the workforce well prepared and secure positions within three to six months post-graduation. Over the past 10 years, over 93% of graduates have completed NP programs of study. The attrition rate during this period is just under 6.5%.

Time to graduation and post-graduation certification: School programs preparing primary care NPs have a successful history of students graduating on schedule (BSN to MSN: full-time study over two years and part-time over three years; RN to MSN: full-time study over three years and part-time over four years). Over the past five years, the average MSN student's time to degree has ranged from 2.2 to 2.5 years. Additionally, the School's national certification pass rate of NP graduates exceeds the CCNE accreditation threshold of an average of greater than 80% over 3 years.

Post-graduation employment: Graduates from the SON have a long history of service to underserved populations. Most of our students are NC natives, and many return to their home communities for employment post-graduation. Employment by our graduates in settings of service to underserved communities is consistently high (>55%). Based on a more contemporary definition which includes management of population health, 73% of our 2016 graduates and 79% of 2017 graduates would be denoted as serving in communities and/or with populations of need. The remaining 20-25% of graduates were employed in acute care practices or have chosen to remain unemployed.

Diversity: Recruitment: Our goal is to produce NP graduates who will represent the communities from which they came and enable the NP workforce to be more representative of the NC population. Recruitment is focused on targeted rural, under-represented, disadvantaged communities, MUAs, and HPSAs. We work closely with HBCUs and community colleges across NC to create partnerships that will build mutual respect, encourage understanding, foster interpersonal and academic confidence, and cultivate academic success for those who seek careers in nursing. Over the past five years, 27-35% of enrollees in UNC's primary care advanced practice programs are from underrepresented minority or disadvantaged communities. This represents a significant increase from the average 10-11% of ten years ago. Despite the increase noted, our goals of graduating NPs that represent the citizen of NC hasn't been met; recruitment efforts continue with foci on pipeline development and enhancing partnerships with targeted communities.

GREs: Our goal is to increase diversity within all of our graduate programs. There is evidence the GRE has a bias impact with regards to certain populations, especially minorities and, as such, is considered a barrier to applicants. In 2014 we sought approval from The University's Graduate School to place a 5-year moratorium on the GRE as a component of the application process for the three graduate programs (MSN, DNP, and PhD). We have submitted a midpoint review to the Graduate School which supports continuing the moratorium on the GRE.

Student support:

Office of Inclusive Excellence (OIE). In 2016, the School changed the name of its Office of Multicultural Affairs to The Office of Inclusive Excellence. In August 2017, the Dean appointed an Assistant Dean of Inclusive Excellence (AD-IE) to serve as consultants for teaching strategies and curriculum resources for providing culturally sensitive care. This includes the facilitation of system-wide efforts for retaining students, faculty, and staff of underrepresented racial and ethnic populations. A key goal of the OIE is to enable the SON to meet the demand for professional nurses who deliver care that is compatible with and highly sensitive to the cultural beliefs and health practices of patients throughout NC and around the globe. The AD-IE may be contacted about any diversity issues encountered by students, faculty, and/or staff. The office provides students with assistance with class assignments, research formulation, self-awareness, test taking skills building, advising, mentoring, coaching and personal needs specific to being a minority (race, ethnicity, age, or sexual orientation) or disadvantaged student immersed in a predominantly white culture.

Campus resources: The University's commitment to the success of all students is most evident in the extensive resources provided. The Learning Center at the UNC-Chapel Hill offers many services to enhance student learning and success. These include: academic counseling, tutoring, reading efficiency skills training, coaching for studying, note-taking, and test-taking. The Learning Center (<http://learningcenter.unc.edu/>) works with students being evaluated for a learning disability and consults with students registered with the Office of Accessibility Resources and Services regarding needed accommodations. The Learning Center offers a specific program for students with Learning Disabilities (LD)-Attention Deficit Hyperactivity Disorder (ADHD) entitled The Academic Success Program for Students with LD/ADHD (ASP). This program focuses on developing strategies to manage volume of academic responsibilities, manage time efficiently, balance academic responsibilities with personal life, and communicate more effectively with professors/advisors. The Writing Center is a free instructional service provided to faculty and students. The support provided includes trained student coaches who help students focus on the writing process, learn new skills for various writing contexts and strategize about options available for completing assignments.

Student funding:

*AENT Program:* From 2011-2017 the School of Nursing received continual grant funding from HRSA in support of primary care NP education (ending June 30, 2017). Through this effort 16- 20 graduate NP students were annually provided traineeship support (\$11,000-22,000 each) which reduced their need to remain employed thus enabling them to complete their program of study in shorter time. The students, in return, committed to serving as primary care NPs in NC post-graduation. , and/or resident of a rural Eligibility criteria included: member of a racial or ethnic minority population, have served in the military, educationally or financially disadvantaged area, medically underserved community or health professional shortage areas.

*ANew funding:* The Advanced Nursing Education Workforce grant (ANew) for which the School of Nursing successfully completed. This funding supports innovative academic-practice partnerships to prepare primary care advanced practice registered nursing students through academic and clinical training to practice in rural and underserved settings post-graduation. The partnership supports traineeships as well as infrastructure funds to schools of nursing and their practice partners who deliver longitudinal primary care clinical training experiences with rural and/or underserved populations. The School has partnered with Goshen Medical Center, Inc. (GMC) in this project. GMC is a federally qualified community and migrant health center organization serving the residents of eastern North Carolina since 1979. GMC is the largest community health center system in NC; counties served include: Duplin, Sampson, Wayne, Brunswick, Columbus, Craven, Cumberland, Harnett, Jones, Onslow and Richmond.

Over the past five years (2014-present), the School has been able to develop innovative curricula, a model of NP Led Practice and provide whole health care that has impacted the state of NC. The primary focus of these four projects has been to educate and train NPs to provide whole health care (behavioral health integration [BHI]) in rural, underserved communities (PI: Soltis-Jarrett). The initial BHI project (HRSA ANE Grant:2014-2019), Psychiatric Nurse Practitioners in North Carolina: Interprofessional Education, Practice, and Integration of Care (IEPIC), was developed to enhance the PMHNP program by preparing clinically competent, culturally sensitive PMHNPs who could integrate behavioral health into acute, primary care and extended care settings in rural/remote, medically underserved areas (MUA), using an Interprofessional Education (IPE) Model. A total of 69 PMHNPs were recruited during the active phase of this project and groups of 5-10 were placed in clinical sites where they could apply the concepts that they learned. This project included an elective, Behavioral Health Integration in Primary Care (3-credits), for NP students interested in learning additional knowledge and skills.

The second project (HRSA NEPQR Grant: 2016-2019) sought to: (a) demonstrate how FNP-led primary care (PC) teams could sustainably implement inter-professional practice that incorporated a PMHNP, thereby improving access to fully integrated, coordinated care for

underserved and high-risk groups in NC; (b) provide inter-professional training that supported culturally sensitive, evidence-based screening, early intervention and treatment models to address population needs (including training health care delivery providers, staff and health-professional-students in training on BHI concepts); and (c) demonstrate patient, population outcomes related to access, quality, and cost. The focus of this project was to develop and test a model that could be translated into practice. The TANDEM3-PC model was able to demonstrate positive patient-centered and provider satisfaction outcomes. The development of clinical sites and preceptors were critical keys to success.

The third project (HRSA ANEW Grant: 2017-2019 & 2019-2023) built upon the previous two projects and focuses on the education and training of all NP students to be able to work to the highest level of their scope of practice to implement whole healthcare to some of the most vulnerable individuals and families in NC. By first partnering with the largest rural Federally Qualified Health Center in NC, this project specifically focuses on the recruitment, education/training and placement of primary care NP students to provide integrated (mind/body) healthcare across 35 clinical settings, in six rural, underserved counties in NC. The inclusion of PMHNP students was introduced in 2019 as a way of teaching the components of the TANDEM3-PC model to implement it in subsequent years. Expansion to other rural areas is a purposeful intention for the next 4 years. A total of 34 NP students (now called Behavioral Health Integration Scholars) are participating in this project as of Fall 2019. Traineeships are offered to support tuition and fees.

The fourth project (HRSA NP-R: 2019-2023) builds upon the previous three grants and will offer a 12-month NP Residency Program using the TANDEM3-PC model developed and demonstrated to provide whole health care in a residency year. Curricula and facilitation of this project are being developed in this planning year (2019-2020). Sites (called Dedicated Education Units or DEUs) are being prepared in rural, underserved communities where whole health care is most needed. A total of 40 NP Residents are planned for this award.

*UNC-PrimeCare:* The School of Nursing collaborated with the School of Social Work to successfully compete for a four-year, HRSA-funded Behavioral Health Workforce Equity Training grant (\$1.9 million) in 2017. The UNC-PrimeCare program is expanding the behavioral health care workforce by training 116 core students committed to serving in integrated care settings in medically underserved areas and populations (MUA/P) and engage students and providers in psychology, medicine, and pharmacy for continuing education opportunities in integrated behavioral health. The UNC-PrimeCare collaboration between the UNC-Chapel Hill School of Social Work (SSW) and the School of Nursing (SON) is particularly strong given that these UNC Schools share a common mission, values, and goals to educate, research, and serve. The first cohort of SSW and SON students will graduate in May 2018, and the second cohort has been recruited. To achieve the goal of expanding the behavioral health workforce, UNC-PrimeCare will be guided by two aims: 1) To enhance the existing MSW and PMHNP curriculums through



the addition of specialized training in providing behavioral health services in integrated health settings through (a) enhanced course work, (b) integrated field placements in medically underserved and HPSA mental health shortage areas, and (c) supplemental seminars to reinforce the Core Competencies for Integrated Behavioral Health and Primary Care and interprofessional teamwork; and 2) To offer interprofessional development and continued education across campus and North Carolina through a newly developed collaborative called the Interprofessional Leadership Institute for Behavioral Health Equity (ILI-BHE).

Barriers to increasing the number of graduates:

The SON currently uses over 500 clinical sites for MSN, Post-MSN and DNP student placements. NC is a predominantly rural state: 80 of 100 counties are designated as rural, 82 counties with a geographic or population HPSA for Primary Care (NCDHHS, 2018). Graduate clinical sites are selected to meet the learning objectives of the individual course and ultimately the program objectives. Criteria that factor into selection of a clinical site include: level of student, the focus of the course, competencies expected, availability of preceptors, previous years' evaluations of the preceptor and site, the distance required for student travel, and opportunity to practice with underserved populations. The NC Area Health Education Center (AHEC) assists the SON in finding primary care clinical placements across the state; many are in rural communities, MUAs and HPSAs. Our goal continues to be to place 75-85% of our NP students have at least one clinical rotation in a designated rural health center, federally qualified health center or other HPSA serving underserved community. The limitation is number of preceptors who are willing to take UNC-CH SON NP students in light of the increased competition from other nursing programs as well as medical and PA students. An additional challenge is the request to provide compensation for these placements.

Currently, two of our greatest obstacles for increasing student enrollment are the issues of clinical placement capacity and preceptor financial compensation being levied by several clinical agencies. Most clinical facilities and practices offer clinical training on a volunteer basis however more and more NP programs nationally are being asked to compensate preceptors or clinical sites. NP programs have very limited financial resources and cannot provide such compensation. The issue of clinical placements is complex and varied among the health professions, however, the state of NC must confront the causes of capacity issues and financial compensation that we are facing in the NP primary care programs.

Although we have had discussions with external practice agencies we have been told that the student placements they prioritize are those focused on preparing medical students, residents, and physician assistant students. In addition, primary care settings, in contrast to acute care settings, are not able to provide placements for a large number of students. Thus, settings are scarce that can provide experiences for nurse practitioners as a whole as well as those focused

on women's health, pediatrics, psychiatric- mental health and for the more in-depth capstone experiences. There is also increasing competition from online programs that are based outside of North Carolina but have students from NC enrolled in their programs. If clinical placement capacity is saturated then all of professions, as stakeholders in addressing the primary care workforce, must find new ways to grow precepting capacity within sites or find new placement and clinical learning options.

Additionally, the SON makes every attempt to locate and assign students to clinical sites as near their home community as possible to ensure the student travel time to 1.5-2 hours (one-way). This has become increasingly difficult due to the large and growing numbers of clinical programs across NC vying for clinical practica arrangements. At this writing, NC has 8 graduate schools of nursing preparing primary care NPs as well as 11 physician assistant (PA) programs that are in competition for many of the same clinical preceptors and agencies, especially those in rural and underserved areas.

The SON employs a Graduate Clinical Sites Coordinator (GCSC). In addition, designated lead faculty in each of the NP population areas assist in identification of high-quality preceptors and agencies. The MSN/DNP program leadership participates in the AHEC meetings which involves representatives from all the UNC campuses regarding preceptors and clinical sites. Given the challenges related to locating and securing clinical sites, the SON incorporates strategies to retain existing and engage new preceptors, including enhanced connections with our NP program alumni to recruit them to serve as preceptors in their primary care practices and offering opportunities for adjunct faculty appointments for clinical preceptors who demonstrate commitment to contributing to the clinical education of our NP students.

The SON has successfully recruited and hired new NP faculty who are engaged in primary care practice in rural, underserved areas of the state. Most recently, practice contracts have been continued for DNP-prepared NP faculty with two Federally Qualified Health Centers located in neighboring counties. Such arrangements increase the School's network of providers and primary care agencies which will notably contribute to the primary care education of our students.



## **UNC Charlotte School of Nursing Primary Care Plan 2020**

The University of North Carolina at Charlotte offers two nurse practitioner programs awarding the Master's Degree in Nursing. In addition, there are Post Masters Certificate programs for each nurse practitioner concentration. The two concentrations are;

1. Family Nurse Practitioner (MSN and Post Masters options)
2. Adult/Gerontology Acute Care Nurse Practitioner (MSN and Post Masters options)

The focus of this report is the Family Nurse Practitioner (FNP) program whose role it is to provide primary care. We continue to experience large number of applicants to the FNP program but face challenges to increasing admission due to a variety of factors such as:

1. Competition for primary care clinical sites from NP, PA, and MD programs across the state as well as online NP programs
2. Substantial payment for preceptors in certain health systems
3. Resources to hire qualified and properly credentialed faculty to teach in the programs

We maintain a steady enrollment of 24 FNP students annually to stay within the availability of clinical and faculty resources. As a consequence all our students are able to complete their clinical commitments and graduate on time.

### **Admission Criteria for the Family Nurse Practitioner**

1. Unencumbered license as a Registered Nurse in North Carolina.
2. Baccalaureate degree from an accredited university.
3. Overall GPA of 3.0 on a 4.0 scale in the last degree earned.
4. Completion of an undergraduate statistics course with a grade of C or better.
5. A statement of purpose, describing the applicant's experience and objective in undertaking graduate study in the chosen specialty. The statement of purpose should explain the applicant's career goal in relation to primary care and family practice. (not to exceed 2 double spaced pages)
6. The three letters of recommendation required by the Graduate School should be from professional colleagues and should speak to clinical knowledge and expertise and one's ability to function as a member of the health care team. At least one reference from a supervisor is preferred.
7. One year of experience as a professional nurse at the time of application.

Standardized tests such as the GRE have not been required for admission to the FNP program for four years. The GRE was found to be a barrier to application and did not demonstrate a relationship to success in the program. Like many NP programs across the nation we worked with the Graduate School to waive the GRE requirement for FNP applicants. We have not seen a change in our low attrition rate and our first time pass rate for the certification exam remains above the national average.

### **Curriculum Focus on Primary Care**

The focus of the FNP program is primary care and therefore all the coursework and clinical is primary care focused. Students are required to complete a minimum of 600 hours of supervised clinical in primary care sites. These sites include reproductive/women's health, adult health, pediatrics, and family practice. Over the course of the curriculum students are precepted by NP, PA, OD, and MD primary care providers. Most students will complete a clinical in a health professional shortage areas, rural areas, health department, and community free clinics in the greater Charlotte area.

### **IT Services**

UNC Charlotte is fortunate to have IT services within College of Health and Human Services. Both faculty and students have access to this service. Students and faculty also have access to an IT helpline, which assist with IT needs via email or phone. IT assists with many of the student's needs throughout the program. One example is students are required to complete a health assessment video. IT provides video cameras for this assignment, which lessens the burden on the student. Another example of IT support is through our online learning platform, Canvas. This learning platform has a 24-hour hotline for faculty and student. Additionally, the College of Health and Human Services has a library liaison that assists students and faculty with inter-library loans and accessing library resources. The library liaison has drop-in office hours where students can receive assistance with a variety of services often accessed online.

### **New Faculty/Development**

The core faculty teaching in the FNP program are full-time faculty at UNC Charlotte and credentialed as primary care providers – typically either Family or Adult/Gero NPs. NP faculty are expected to maintain a practice and the School of Nursing has a faculty practice plan. Faculty continue to seek educational opportunities both related to teaching and primary care. For example one faculty member received an internal teaching grant to develop a simulation for identifying skin cancer lesions that is used in the Health Assessment course. Faculty are encouraged and supported to seek continuing education and scholarship based on practice opportunities.

### **Student Support/Incentives**

Students receive support from a number of areas. There are a number of scholarships specifically targeting nursing graduate and undergraduate students in nursing that are annually offered through the College of Health and Human Services. The School of Nursing has applied and received annual scholarship grants from Minute Clinic ranging from \$5,000 to \$2,000 that are available for primary care focused NPs. In addition, one of our students was recognized as an outstanding student and funded by the local nurse practitioner organization for \$1,000

### **Collaborative Efforts with Local Communities**

The School of Nursing has affiliation agreements with hundreds of primary care practices in the greater Charlotte region. These include offices owned by health systems, health departments, free clinics, and independent practices. The largest health care system in the Charlotte area is Atrium Health. While we do not have a partnership with them for the FNP program, we do have a partnership to offer the Acute Care NP and Nurse Anesthesia programs. Many of the FNP graduates from UNC Charlotte are employed in primary health care settings related to Atrium Health.

### **Preceptor/Mentoring Activates**

We are actively involved with many of the local organizations such as the local chapter of the nurse practitioner organization (Metrolina Coalition of Nurse Practitioners) and the local nursing honor society, Sigma Theta Tau. FNP students are actively encouraged to attend meetings and participate in Metrolina Coalition of Nurse Practitioners as part of networking and building a community. We actively engage in partnerships with Atrium Health, community free clinics in various counties, local health departments throughout the state.

### **Self-Directed Learning Activities**

Students are directed in their learning experience in the didactic portion of the program. The students then become proactive in their learning by creating self-directed learning goals for their practicum/clinical portion while aligning these with the objectives for the course. FNP students engage in simulation to refine skills. Additionally, live models are employed and used in health assessment simulation experiences.

### **Research in Primary Care**

Faculty in the SON at UNC Charlotte have a wide range of research interest related to primary care practice and strongly promotes inclusion of students in research through assistantships. Examples of current research topics related to primary care include human trafficking, child abuse, chronic disease management (primarily hypertension, heart disease, diabetes) in rural areas, nutrition, and health literacy.

### **Student Interest Groups**

We offer an annual community seminar to focus on childhood sexual abuse. Students are encouraged to attend The Darkness to Light seminar to assist with identification of child abuse. This seminar engages the community and allows students to network with others in the community. Students also have the opportunity to engage in decision-making within the SON by serving on committees such as the Graduate Curriculum Committee and Student Advisory Council.

### **Challenges and Response**

Multiple barriers exist related to student placement in primary care areas. For example, increased competition for preceptors and clinical sites, particularly in pediatrics, remains a challenge. Paying preceptors is an issue of increasing concern, particularly now that some health systems have initiated paying for preceptors. At UNC Charlotte, this has been addressed through initiation of additional fees.

**Increasing Primary Care NP Initiative**

A new initiative at UNC Charlotte to increase FNPs in rural areas is our “Rural Initiative”. When fully implemented it will allow us to admit up to 6 FNP students (one clinical group) from rural areas who will stay in their rural areas to learn and complete clinical requirements. Completing this initiative will require making material available online, organizing immersion experiences, assessing availability of preceptors in targeted rural areas, and funding to purchase technology that can link the preceptor/student/clinical site to the instructor and hire clinical instructor for the rural cohort.

Submitted by: Dr. Dena Evans, Director, UNC Charlotte School of Nursing

## **UNCG Primary Care Adult/Gerontological Nurse Practitioner Report 2018-19**

### **1. Admission Criteria**

Since 2015, the University of North Carolina at Greensboro (UNCG) School of Nursing (SoN) has admitted 119 students into the three-year Doctor of Nursing Practice (DNP) Adult/Gerontological Nurse Practitioner (AGNP)—Primary Care concentration program. The first two cohorts of students (Classes of 2018 and 2019) have graduated, and the pass rate on the AGNP Credentialing Examination was 100% for the 50 students who graduated. Each fall, the UNCG SoN admits approximately 24-26 students to the AGNP DNP post-baccalaureate program. Students meet admission requirements with a 3.2 or above GPA from their accredited baccalaureate program, three letters of reference, a personal interview, official transcripts, RN licensure, and a personal statement.

### **2. Curriculum Focus on Primary Care**

The current curriculum for the AGNP Primary Care post-baccalaureate DNP student includes 73 credit hours and 1035 practicum contact hours in primary care. Core courses include utilization of research and evidence-based practice, biostatistics and epidemiology, law, policy, and economics of healthcare and effective leadership for advanced practice. Support courses include pathophysiology, pharmacology, and advanced nursing roles; and specialty courses include health assessment and adult and gerontological didactic and practicum courses with a primary care focus. A DNP project is conducted over five consecutive courses.

### **3. IT Service**

The School of Nursing is supported by an instructional design technologist who assists faculty in online pedagogical strategies. The University offers courses and support to faculty and students regarding Canvas, Gmail, and other software used for instruction. Support for IT issues is available online or by phone. A hardware analyst is available to install and maintain computers, printers, and other assistive devices for faculty. The Communication Specialist in the School of Nursing maintains current program information on the SoN website as well as other items of interest such as the DNP Student Handbook, scholarship sources and links to the program application. Program assistant staff maintain databases for the clinical practica and the enrolled student databases needed to support such areas as HRSA traineeship funding applications and follow up reports.

### **4. New Faculty/Development**

Our cadre of advanced practice faculty has grown since the inception of the DNP program. We currently have a full-time director for our DNP program who is a licensed Adult Nurse Practitioner, and 4 faculty FTEs with major teaching assignments in the DNP program. We have hired an additional full-time FNP who is DNP prepared to begin in Fall 2020. We have three additional part-time advanced practice faculty members who support the program by teaching core courses. New faculty members are assigned to a mentor for one year when they enter the School of Nursing. The mentor provides support in the areas of teaching and work-life balance. New faculty are required to participate in formal orientation sessions for both the University and for the School of Nursing. The technology staff conduct individual orientation sessions with new faculty and assist them in setting up their computers, email, access to the

learning management system (Canvas), and to acquaint them with technology available in the classrooms.

#### 5. Student Support/Incentives

We provide many types of support for our AGNP students. Once admitted, they are assigned to an AGNP faculty member who serves as an academic advisor. Additionally, the DNP Program Director provides direction to the students. 26 AGNP students received a total of \$69,254 from SoN scholarships for AY 2018-19. 23 students received a \$5,000 stipend from our HRSA ANEW grant. Some students have chosen to work as graduate assistants and have received tuition waivers in addition to the assistantship stipends.

#### 6. Collaborative Efforts with Local Communities

The courses offered in the DNP program are delivered face-to-face, online, or in a hybrid format (a face-to-face and online mix). The program is housed in the Union Square Building, which is about 1 mile from the main UNCG Campus. This building is a cooperative effort of 4 separate entities: UNCG, Cone Health System, NC A&T University, and Guilford Technical Community College. Space in the building is shared, and the collaboration that has occurred has enabled the university and college programs to deliver nursing courses at the site, as well as for the Cone Health System to offer staff education and new staff orientation in the shared space. For the AGNP student clinical experiences, over 250 clinical sites across North Carolina are used. Approximately 150 of these sites are located in counties designated as health professional shortage areas, and approximately 30 are located in rural areas. The program has used four urban School of Nursing Health Centers located in federally subsidized senior housing communities serving the Medicaid population and working poor. More than 70% of our AGNP graduates are practicing in medically underserved communities, primarily in North Carolina.

#### 7. Preceptor/Mentoring Activities

We have a large cadre of nurse practitioners and physicians who precept our students. We utilize the NC Board of Nursing guidelines for development of preceptorships. We have a clinical coordinator who works closely with our preceptors and our clinical sites and coordinates the contracts with all preceptors and clinical agencies. An evaluation plan and instrumentation are in place to provide feedback regarding preceptor performance, faculty performance, student performance, and evaluation for the clinical site. In July 2017, under the direction of Dr. Laurie Kennedy-Malone, we received a two-year HRSA grant (\$700,000 per year) to support clinical site and preceptor development. Students are also eligible for a supplementary stipend for tuition and fees. Among our current preceptors, 72% are in medically underserved communities (MUCs). One of the major outcomes for the HRSA grant was the development and dissemination of preceptor development activities and materials. We continue to explore a new and innovative program to embed an NP faculty member in the UNCG Student Health Center. This individual will be a member of the Student Health Services (SHS), providing medical services and will precept students. We believe this arrangement will spawn new learning opportunities for our AGNP students.

#### 8. Community Practitioner Support

We have contracts with over 250 agencies in NC that provide practicum experiences for our AGNP students. We also utilize the NC AHEC system for placement of students with a preceptor. In a few instances, the NC AHEC has been instrumental in arranging for housing for the students if the clinical site



is more than 2 hours from the student's home. Students are placed with preceptors in a variety of settings including physician practices, community clinics, health departments, long-term care, hospice, VA facilities, and student health.

#### 9. Self-Directed Learning Activities

Our AGNP students engage in simulation experiences in our laboratories at UNCG. They refine their practice skills through these experiences. They also have an individualized capstone experience in their final five courses that allows them to develop a project using the latest evidence to improve practice.

#### 10. Research in Primary Care

Research in primary care is conducted through our PhD program that seeks to promote health and eliminate health disparities in women and children, older adults, and ethnic minorities. We also have a Center of Excellence in Health Disparities and Center for the Health of Vulnerable Populations. AGNP students may participate in some of the experiences through research assistantships and health fairs. Within the context of the DNP project, each student must complete an evidence-based practice project in which they focus on a problem area within primary care, conduct a comprehensive review of the literature related to the problem, identify evidence-based solutions for the problem, develop a plan and implement the solution to the problem, and evaluate the effectiveness of the plan. In the final semester of their program, students present their projects to, students, faculty, and to the various stakeholders they have identified. This dissemination is required; all students submit a final paper of their project, and many submit the manuscripts for publication.

#### 11. Student Groups

Students have the opportunity to be a part of the Graduate Student Association that provides some funding for professional presentations and research. They also may choose to be a member of the Multicultural Nurses Association. In summary, our AGNP students are meeting an important need to provide primary care to those aged 13 and older in North Carolina and the nation. Our graduation rate for the AGNP students for our classes of 2018 and 2019 is 86%. (classes of 2018 and 2019) was Specialty certification rates for the classes of 2018 and 2019 in were 100% for AANPCB. . Our employment rates were 100% with over 70% working in underserved areas.

#### 12. Plans for Future Growth

We continue to have excellent applicants for the AGNP Post-Baccalaureate DNP program. We have admitted 28 students for Fall 2020, out of a total 45 applicants. Applications for the program have been strong, with many students being eligible and meeting admission criteria. We continue to have wait-listed applicants in the event someone declined or delayed admission, and we have provisionally accepted applicants for the following year. At the present time, we are limiting admission to 28 students. This limit is due to the limited number of clinical sites available for precepting our students. We compete not only with other DNP Nurse Practitioner programs, but also with the many Physician-Assistant programs in the Greater Triad and Triangle regional areas.

# University of North Carolina Wilmington School of Nursing

Linda Haddad, RN, PhD, FAAN, School Director

## Report: Primary Care Program Strategies to Increase Graduates Entering Primary Care February 2020

UNCW School of Nursing offers three means by which Registered Nurses can complete programs of study that will allow them to practice as Nurse Practitioners (NPs) in primary care. The programs are:

MSN degree in Family Nurse Practitioner (FNP)  
Post-Graduate Certificate (non-degree) program in FNP  
Post-Masters APRN Doctor of Nursing Practice (DNP)

During the last two academic years, our programs have utilized multiple strategies to increase the number of primary care providers. Our efforts have focused on the following areas:

### ***Admission Criteria***

We have traditionally accepted approximately 30% of our applicant pool into the MSN-FNP and Postgraduate Certificate in FNP degree programs. However, we have transferred our MS-FNP program into a BS-DNP program effective August 2020, we also starting a new BS-DNP degree in psychiatric Mental Health Nurse Practitioner concentration effective August 2020, and will increase enrollment by an additional 20%, with an increased number of full-time applicants in the cohort. This will accelerate graduation and entry into practice. This new BS-DNP program will generate new primary care at the highest level of nursing practice. The first cohort of BSN DNPs will graduate in May 2023. Approximately 100 students will graduate each year in -3 years. Table 1 and 2, reflect the number of enrollment and graduation in the last three years

<b>FNP</b>	2017	2018	2019
Number Enrolled	53	46	51
Number Graduated	38	50	49
<b>Post FNP</b>			
Number Enrolled	14	12	10
Number Graduated	2	1	12
<b>DNP</b>			
Number Enrolled	13	11	12
Number Graduated	0	0	9

### ***Curriculum Focus on Primary Care***

Our programs have focused on primary care since its inception 17 years ago. The new BS-DNP continues to focus on changing needs within this setting, most recently on genetics/genomics, ethics, health communication, and interprofessional education and practice. Our new DNP program is allowing

doctoral nursing students to conduct practice change projects focused on vulnerable rural and underserved populations' health needs.

### ***IT Services***

Two graduate-prepared dedicated eLearning professionals are relocated to our school of nursing building, to better directly serve students, faculty, and staff. Students received training in Canvas, library database resources, and Typhon clinical practice software during orientation when they begin this program. One reference librarian is assigned to work with faculty and students. The eLearning Center offers 20 on-campus learning opportunities annually so that faculty can expand and deepen skillsets in using technology in the curriculum and support learner needs.

### ***New Faculty/Development***

During the academic year 2018-2019, we interviewed and hired two new nurse practitioner faculty members, who will teach across all levels in the school of nursing. We also hired three additional faculty starting the 2019-2020 academic year. In preparation for the BSN-DNP program, we will continue to recruit appropriate, experienced NP and DNP faculty in family, psych and leadership. Faculty members are encouraged to attend at least one national clinical conference annually in their population/setting practice area and the school of nursing supports this attendance. Faculty also received the opportunity to attend onsite clinical simulation educational events in the Clinical Simulation Center. All faculty maintain current national certification. Current NP faculty FTE = n=10.

### ***Student Support/Incentives***

Our Clinical Simulation Center is now utilized for graduate nursing education. Students have participated in simulated educational opportunities to conduct comprehensive geriatric assessments and to work in inter-professional teams to deliver difficult health news. This work has been published by faculty groups in peer-reviewed publications. An applied learning grant has supported reflective journaling experiences for all graduate nursing students.

### ***Collaborative Efforts with Local Communities***

Through the Center for Healthy Communities and the Assistant Dean for Community Engagements' office within the College of Health and Human Services, opportunities exist for faculty to engage as fellows to collaborate with community agencies to complete quality assessment and performance improvement projects. Examples of these projects include county-level health assessment survey, neighborhood community participatory research Google map survey, Community resilience training, clinical expert panel, and others. Several grants have been funded allowing faculty and students to engage with vulnerable primary care populations (persons with dementia, patients with advanced heart failure, adolescents with risky behaviors, women's health, and HIV care, older adults with chronic illness).

### ***Preceptor/Mentoring Activities***

Student mentoring: Faculty lead graduate nursing students in one-to-one Directed Independent Study (DIS) projects each semester, to collaborate on a match between the students' clinical care interests in

primary care practice and the expertise of the faculty member. Students are mentored in various components of care delivery evaluation and reviews of the literature to support primary care research. For the academic year 2018-2019, a total of 40 DIS projects have been undertaken.

Our clinical preceptor partners include MD, DO, NP or PA practitioners who precept our graduate nursing students for a total of 600 clinical hours. The faculty visit each clinical student/site/preceptor to assess the students' clinical progress and learner needs. Preceptors are encouraged to share their insights about advance practice nursing curriculum, assignments and practice needs.

### ***Community Practitioner Support***

The Clinical Placement Coordinator is using her professional networks to continually advance our efforts to form new collaborative partnerships to include clinical preceptors for our NP students. During Spring term 201019 10 % of our students were placed in new clinical sites with new preceptors, and this effort is possible due to faculty efforts to grow and maintain partnerships with colleagues practicing in primary care throughout NC.

### ***Self-Directed Learning Activities***

Students participate in clinical simulation activities that promote self-directed individual and team learning. Students have engaged in learning how to present bad health news to primary care patients, conduct comprehensive geriatric assessments in teams, worked in collaborative care teams to investigate child abuse cases and have participated in intensive clinical laboratory stations to gain proficiency in primary care skills (suturing, joint injections, health assessments, radiological diagnostic examinations, pre-surgical clearance).

### ***Research in Primary Care***

Several grant mechanisms have allowed nursing faculty to increase productivity in conducting clinical research for primary care patients. These have included ETEAL (Explorations to transform education in applied learning) grants, Corbett grants (funded through the Corbett Family Foundation) and Cultural Arts grants. Examples of faculty research within the last two academic years include Use of Aromatic Oils in Ill Elders; How to Have Difficult Conversations in Primary Care Practice; Adolescent Risky Behaviors; Pediatric School-Based Health Clinic Care Delivery; Dementia and Driving Safety).



The Western Carolina University (WCU) School of Nursing currently offers two Family Nurse Practitioner (FNP) graduate programs designed to prepare students for primary care practice.

- Master of Science-Nursing – Family Nurse Practitioner Concentration
- Family Nurse Practitioner Post-Master’s Certificate Program

The FNP curriculum is designed to support attainment of competencies in family health promotion and clinical management of common health conditions across the lifespan. Courses focus on content relevant to all aspects of primary care, such as screenings, preventive health visits, acute problems, and chronic disease management.

Students receive throughout the FNP program(s) training in advanced clinical skills and diagnostic reasoning needed to practice in primary care settings. Clinical training rotations are completed in primary care sites throughout the western part of the state during the program. FNP students complete individual student graduate research projects focused on rural practice settings, access to care and a variety of problems commonly addressed in primary care practice.

The WCU FNP program(s) have been successful in the recruitment of a strong pool of regional applicants. During the admission process, each applicant’s interest in providing healthcare in primary care settings is evaluated along with their academic qualifications. The number of applicants is significantly higher than the number of FNP students the program can serve due to several restrictive factors including:

1. A limited number of primary care clinical sites and preceptors available
2. Substantial competition for primary care clinical training sites from medical schools and residency programs in the areas
3. A shortage of nursing faculty for FNP programs
4. Lack of educational and simulation lab space for teaching and practical exams

WCU has been awarded Health Resources and Services Administration grants during the past two year reporting period. The Advanced Education Nursing Traineeship grant supported scholarships for FNP students studying to become primary care nurse practitioners. This year WCU received the Advanced Nursing Education Workforce grant, which combines scholarship support and development of a community partnership with a healthcare organization. With support from this grant, WCU initiated the Partnership for Longitudinal Academic/Clinical Education Strategy (PLACES) with Mission Health. PLACES creates an innovative academic-practice partnership to prepare primary care nurse

practitioners, with the ultimate goal of increasing the number of primary care providers in rural and underserved areas.

Preceptor development is one component of this project, as well as an annual conference focused specifically on primary care practice issues.

The WCU FNP program is fortunate to have a part-time clinical placement coordinator to assist in the arrangement of primary care clinical rotation sites for FNP students. Due to the significant and increasing competition for primary care training sites, this position is essential to the success of FNP student placement for clinical courses.

WCU is working to transition curriculum to a FNP-DNP Program in the next couple of years.

Development of ongoing clinical collaboration contracts is one focus currently underway to improve the process of supporting student training in primary care.

In the past two years, the WCU FNP program has transitioned from a 3-year part time program to 2 year fulltime program. This allows students to become primary care providers in a more condensed amount of time. The graduation report below reflects the growth in numbers of students who attained a MS-N or Post-Master's Certificate as an FNP. The program completion rate has been 93% and has improved to a 100% completion rate in the past two FNP student cohorts.

Number of FNP Graduates	
May 2015	13
May 2016	16
August 2016	25
August 2017	25
August 2018	25
August 2019	25

In the most recent employment survey of WCU FNP alumni, the majority indicate that they are currently practicing in primary care and most work in a Healthcare Provider Shortage Area or a Medically Underserved Community clinic as noted above. WCU is committed to preparing nurse practitioners as primary care providers and will continue ongoing efforts to contribute to this particular workforce need in North Carolina.

Employment Data	
Employment data Available	76
Working in Primary Care	67%

Working in Specialty Practice	33%
Working in HPSA or MUC Clinic	85%



## **Division of Nursing**

**Cecil Holland, RN, MEd, MSN, FNP, EdD, PhD**

**Associate Dean & Chief Operating Office of Division of Nursing**

To meet the challenges of an aging population, rising health care cost, chronic disease e.g., diabetes, hypertension, etc., and a shortage of primary care physicians, the United States health care system must maximize the use of nurse practitioners, especially in primary care.<sup>1</sup>

Nurses working in advanced practice roles meet the complex health needs of our citizenry. Nurse practitioners have been providing primary, acute and specialty health care to patients for nearly 50 years. With more than 270,000 nurse practitioners licensed in the United States, a critical need still exist to increase the number of nurse practitioners entering primary care after graduation.<sup>2</sup> As the healthcare needs of the nation continue to expand, and the cost of health services explode, it is incumbent on the UNC System to produce primary care providers who provide quality, cost-effective health care services to all populations. The evidence has demonstrated that nurse practitioners have consistently proven to be cost-effective providers of high-quality care.

According to the American Association of Nurse Practitioners, approximately 87% are certified in primary care.<sup>1</sup> These advanced practice providers meet the full range of primary care needs from point of care to ongoing management of acute and chronic conditions. The American Association of Nurse Practitioners' vision for the future, consistent with the IOM and RWJF recommendations, calls for high quality health care for all people. It is critical for all primary care providers to practice to the full extent of their scope of practice. It is clear, as the nation faces a plethora of health care crisis'; as baby-boomers continue to age; and the ever increasing cost of health care services, it is incumbent of the health care enterprise to maximize the nurse practitioner. Nurse practitioners bring strength to a fragile workforce and maximize available potential to address the challenges we face as a nation.

Winston-Salem State University prepares graduates to practice as family nurse practitioners. Our FNP graduates are prepared to provide comprehensive primary care to patients across a broad range of health care settings, especially underserved and disadvantaged patients, and those of diverse ethnicity. Graduates achieve a personal and intellectual transformation, a global perspective, and a creative approach to meeting the changing health care needs of the community and society.



WSSU is intentional regarding its plan to increase enrollment in the FNP program. An increase will not only meet enrollment projections, increase WSSU state allocations/funding and student credit hours, but also add to the critical primary care advanced practice workforce shortage. Below is a proposed projection of FNP students over the next 3 years.

#### **Proposed projections over next 3 years**

<b>Student Type (FNP ONLY)</b>	<b>2020-2021</b>	<b>2021-2022</b>	<b>2022-2023</b>
New	45	50	50
Continuing	45	45	50
Total	90	95	100

#### **Immediate needs to increase enrollment**

- Additional FNP prepared faculty
- Enhanced/improved skills lab
- Dedicated practicum sites
- Increased fiscal resources

#### **Justification of Needs**

##### Additional FNP prepared faculty

Current faculty in the graduate programs teach across all graduate concentrations. There are 5 faculty who teach the FNP concentration; however, these faculty teach in the DNP program as well. Additionally, no current faculty has expertise or certification in women's health. Increasing enrollment will require at minimum one full-time doctorate prepared FNP faculty and one adjunct faculty with women's health expertise.

##### Enhanced/improved skills lab

Current lab space is not sufficient for current enrollment. Any projected growth will require additional laboratory space. The current lab has 9 primary care exam settings. An additional 4-9 primary care exam settings is preferable. This will allow students to work in teams during the skill components and validation of their training.

### Dedicated practicum sites

There is a severe shortage of primary care clinical sites. In order to actualize the projections, dedicated clinical sites must be secured. Many primary care clinical sites are charging schools and/or students for clinical rotation in their facilities. This trend is expected to continue. The Division of Nursing at WSSU will continue to develop MOUs that maximizes clinical opportunities while minimizing and/or eliminating cost. We will continue to explore academic-practice partnerships that may lead to securing more clinical/practicum sites.

### Increase fiscal resources

Many schools provide financial support to their graduate students in the form of scholarships, graduate assistantships, etc. WSSU has limited financial resources with which to provide support to graduate students. This makes it difficult to grow graduate enrollment, particularly in the family nurse practitioner concentration. The Division will continue to seek funding sources for the FNP program through collaborative work with the Office of Sponsored Programs and other state and/or federal agencies. If more financial resources were available to our FNP students, we believe we would draw more students, students would work less (most students work full-time while in the program) thereby increasing program completion rates and decrease students changing status from full-time to part-time.

The above are just a few of the needs that may influence our ability to increase enrollment in the FNP program. Recruitment and marketing is vital. Resources, i.e., human, time, fiscal, etc., are need to scale-up recruitment and retention efforts. The Division will work with Enrollment Management Services and other student support services to support FNP students as they matriculate through the graduate program.

<sup>1</sup> American Association of Nurse Practitioners – NP Facts. Retrieved 2/26/20 from <https://storage.aanp.org/www/documents/advocacy/position-papers/PrimaryCare.pdf>

<sup>2</sup> AANP National Nurse Practitioner Database, 2019.

# Physician Assistant Programs

**To:** Board of Governors, University of North Carolina General Administration  
**From:** Betty Lynne W. Johnson, MEd, PA-C Emeritus, PA Program Chair & Director  
**Date:** March 3, 2020  
**Re:** Primary Care Initiative at Campbell University PA Program

In response to the charge to increase Campbell PA's graduates who practice in primary care, please accept the following summary. The overall mindset of Campbell PA is to instill the desire to serve in primary care within rural health settings. Our mission and program goals include promotion of a patient-centered approach to health and disease by emphasizing primary care. Although there is no specific primary care track for our students, Campbell PAs are educated as generalists who are capable of clinical practice across all medical disciplines and populations -- including primary care in rural settings.

During the didactic year at Campbell, PA students have many and varied opportunities to learn about and experience primary care medicine. The curriculum is heavily skills based and most of the patient simulations and clinical case studies are based upon primary care patients, usually in rural settings. During the didactic year students have the opportunity to participate in rural health service-learning events, one in particular is the Med-Fest event in which students provide sports physicals for Special Olympic athletes across Harnett County. Students are also encouraged to volunteer weekly at the Campbell Community Care Clinic, a free clinic for underserved patients which is supported by the university and driven by interprofessional teams of health care students.

During their clinical year of education, Campbell PA students spend more than seventy percent of their time in primary care settings. The estimated break-down of sites is as follows: Family Medicine - ~9 rural sites that take a total of 25 students/year; Pediatrics - ~11 rural sites that take a total of 32 students/year; Womens Health - ~3 rural sites that take a total of 13 students/year; Internal Medicine - 5 rural sites that take 25 students/year; and Emergency Medicine - 10 rural sites that take about 28 students/ year. Students are also required to have a specific primary care rotation (ambulatory medicine) which varies by site. Furthermore, students have the option of choosing additional primary care rotations for their two electives during the clinical year. Primary care rotations in rural health settings are well-established in the clinical year of education at Campbell PA.

Primary care and rural health are always part of the emphases at our recruiting and admissions activities. Students are directly informed that Campbell PA aspires to educate and place primary care providers where they are most needed. At numerous junctures in their education, students are given information regarding the National Health Service Corps as well as county Health Departments as a pathway to enter primary care while they also receive tuition assistance. Several scholarships are granted each year to matriculating students who plan to enter primary care.

One of the unique opportunities for Campbell PA students is the MSPH/MPAP dual degree option. As the first of its kind in North Carolina, and only one of six in the nation, this innovative program incorporates the best of public health awareness with practitioners equipped to serve community and patient needs. A significant portion of the didactic and practical education of these well-trained students is primary care focused. Students who have graduated with these dual degrees naturally gravitate to more community based, primary care settings. They have a wealth of expertise to share with their patients and colleagues.

According to recent graduate surveys (Class of 2017 and 2018- one-year post graduation), of those respondents, 21.5% are in primary care, 4.75% in emergency medicine, 15.25% in Urgent Care, 31% in surgery, and 27% are in a specialty. The surveys reveal that 24.5% of respondents practice in a rural setting, 27% in a suburban setting, and 48.5% in an urban setting. Campbell PA is faithfully continuing to inspire and promote primary care in rural settings as its ideal for graduates entering clinical practice.

One last opportunity offered at Campbell University is the Primary Care Champion Fellowship/ master's degree funded by a HRSA grant awarded to Campbell University School of Medicine and PA Program. Physicians and PAs practicing primary care are recruited and enrolled to learn about how to better support/ develop the medical learner within primary care/ rural health settings. This program has recently graduated its first cohort of primary care champions and is now in the second iteration of the program. This initiative fully embraces the charge to train and support primary care champions practicing in rural sites across North Carolina.

## **DUKE PHYSICIAN ASSISTANT PROGRAM**

The Duke Physician Assistant (PA) Program was established in 1965 as the first PA Program in the United States and has resided in the Department of Family Medicine and Community Health (renamed in 2019) since 1967. Our mission is to educate caring, competent primary care physician assistants who practice evidence-based medicine, are leaders in the profession, dedicated to their communities, culturally sensitive, and devoted to positive transformation of the health care system.

The Duke PA program is ranked #1 in the nation according to the 2019 US News and World Report. The program offers longitudinal primary care rotations in several rural/underserved areas across North Carolina, and provides a special scholarship, which is attached to a longitudinal primary care rotation in Mitchell County. All students in the program complete 8 weeks of clinical training in both primary care and internal medicine, and 4 weeks of training in the primary care specialties of general pediatrics and women's health. Our longitudinal and other primary care experiences are dependent on strong relationships and engagement with the communities in which these practices are based. Students live in these communities for their clinical experience, often in AHEC housing. We are indebted to AHEC for their assistance in making our primary care experiences possible in North Carolina's rural communities.

Training primary care PAs is part of the mission statement of the program, and is reflected in our admission and recruitment processes. We value applicants who represent a match to our program's mission, and give preference to those who are from NC, rural or underserved areas, and have demonstrated a passion for primary care, as data indicates these individuals are more likely to return to similar communities and practice primary care. Our most recently matriculated class includes 40% of students who are underrepresented and/or disadvantaged.

Our graduates continue to seek employment in primary care settings. Of the 81 students who have secured employment from the most recent graduating class, 32% work in a primary care setting, and 42% of that group provide primary care in North Carolina. The relationships students build in North Carolina communities during their training is a key factor in post-graduation job placements.

In 2016, the PA Program (through Duke University) was awarded a 5-year federal HRSA Primary Care Training Grant to develop curriculum aimed to enhance primary care training. Using federal funds, we created a Primary Care Preceptor Mini-Fellowship. This training provides current preceptors (licensed PAs, NPs, MDs, and DOs) an opportunity to gain additional knowledge and skills in curriculum design, conducting QI projects, population health, opioid use disorders, and interprofessional teamwork to support their mentorship of learners in the delivery of quality primary care. To date, 25 primary care fellows have completed the program, with another 10 due to complete the fellowship this spring.

Several of our faculty are involved in research aimed at the primary care workforce, and the role of PAs in providing high-quality care as part of primary care teams. These health services researchers collaborate with scholars in the Department of Family Medicine and Community Health, the university at large, and nationally to answer questions about PAs' effects on access, quality, cost, and utilization of healthcare.

In summary, the Duke PA Program demonstrates a commitment to primary care through our mission, admissions processes, curricular focus, and faculty scholarship.



# ECU

## PHYSICIAN ASSISTANT STUDIES

The mission of the Department of Physician Assistant Studies is to provide educational experiences which prepare physician assistant graduates to enhance access to primary medical care, with a hope to increase care for the citizens of rural and medically underserved Eastern North Carolina and beyond. We seek to achieve this mission in an educational community where faculty, staff, clinical instructors, students, and other health care providers work together in an atmosphere of mutual respect, cooperation, compassion, and commitment.

Med Underserved Area/Health Prof Shortage	Class 2017		Class 2018	
	n	%	n	%
Yes	9	36	9	42.86
No	16	64	12	57.14

In which state do you practice?	Class 2017		Class 2018	
	n	%	n	%
NC	25	83.33	25	89.29
VA	2	6.67	0	0
SC	1	3.33	1	3.57
Other	2	6.67	2	7.14

Medical Specialty:	Class 2017		Class 2018	
	n	%	n	%
Family/General	6	20	8	28.57
General Internal	4	13.33	1	3.57
General Peds	0	0	1	3.57
Total		33.33		35.71

Based on the data above gathered through voluntary anonymous surveys collected six months after graduation the program has demonstrated positive numbers in terms of our graduates working in: 1. Med Underserved Area/Health Prof Shortage (+3.86%), 2. North Carolina (+5.96%), and 3. Primary Care (+2.38%).

To increase the number of PA students entering primary care in North Carolina after



graduation our program focus is based on primary care and our admissions practices favor North Carolina residents. As demonstrated in the data above, we will continue these practices which have been successful in the past.

Our program actively encourages students to apply for scholarships provided by the State of North Carolina such as the Forgivable Education Loans (FELS) and the National Health Service Core program sponsored by the Federal Government. Both of these programs pay for PA School contingent upon alumni taking a primary care job in a medically underserved area. In the first semester of PA education at ECU, students are mandated to complete service learning with a focus on primary care. The list of acceptable sites has a mix of rural and underserved population including, but not limited to: local/regional afterschool programs, migrant farm workers, free clinics and veteran mobile units.

To further our primary care mission each ECU pa student completes four 1 month clinical rotations directly related to providing primary care. Two rotations are required in inpatient Family Medicine, one rotation in Internal Medicine outpatient and one rotation in Internal Medicine inpatient. This gives the student at least 40% of their clinical experience in primary care settings.

In addition to these successful strategy's the program has also applied for a 4-year HRSA grant which if awarded, a part of the funding will be used to increase the number of graduates who practice primary care specifically in rural underserved areas by expanding required rural primary care rotations and strengthening the rural preceptor-learner partnership and facilitating both immersion as well as distance training.

As to the question, "What actions should we as a state commit to over the next two years to ensure that we recruit, train and retain a qualified and adequate number of primary care providers in NC?". Though the action(s) the state could take are many here are some suggestions:

- Fund a program like NCSEAA's FELS or the National Health Service Corps Loan Repayment program that provides free tuition and add a stipend for living expenses in exchange for working in a rural and underserved primary care site in NC.
- Provide more low-cost housing for students who do clinical rotations in a rural and underserved primary care sites in NC, particularly to public programs who take 80% or more of their students from North Carolina.
- Provide additional funding to pay clinical preceptors in rural and underserved primary care sites in NC, particularly to public programs who take 80% or more of their students from North Carolina.



### **Department of Physician Assistant Studies**

*Learning. Caring. Serving. Leading.*

Elon University PA Program is celebrating the fifth anniversary of our charter class' graduation this year! We will graduate our 6<sup>th</sup> class of students in Feb 2020 for a total of 224 graduates over the past six years. Our current first-time takers pass rate on the PANCE is 98% with the classes of 2015 and 2019 both achieving a 100% pass rate on the first attempt. We currently have a clinical class of 38 students and a didactic class of 39 students. Our didactic class is the first on our new 24-month curriculum which will allow them to graduate in December 2021 and enter the workforce earlier than prior classes that graduated in February.

Elon PA students are trained as generalists with didactic lectures given from a primary care perspective. Many of our clinician lecturers are primary care practitioners. Our required rotations include experiences in primary care, pediatrics, and women's health among others. Many of our students volunteer at the local free clinic, the Open Door Clinic, during their first year. The student society has selected this organization as their primary philanthropic organization and has raised more than \$20000 for the clinic in each of the past two years.

Our admissions interviews allow students to share experiences/ties they have to primary care/underserved areas which is consistent with the program values. We have developed a video presentation that is displayed on our website with a message about the need for primary care practice and featuring a primary care scholarship recipient and our medical director.

Our graduate employment surveys indicate students are staying in NC for practice and many are practicing in primary care. The class of 2019 showed 73.6% becoming licensed in NC with 29% accepting jobs in primary care practices. For the class of 2018, 31.5% of graduates indicated they had accepted a position in primary care after graduation. Over the course of our five years of graduating PAs, 33% of our graduates (62 out of 188) have taken jobs in primary care practices after graduation.

To assist in recruiting, training, and retaining primary care providers in NC, it would be helpful to develop more training sites for clinical rotations, particularly in rural areas. Clinical site availability is the biggest concern facing most healthcare provider educators. Without enough clinical sites, we cannot educate and graduate students who would love the opportunity to work in primary care.

## **2020 Gardner-Webb University PA Studies Program**

The Gardner-Webb Physician Assistant Studies Program inaugural class of 24 students matriculated in January 2014. In January 2020, the program enrolled our seventh cohort, and our fifth cohort will graduate in May 2020. The initial cohort size of 24 has now grown to a maximum of 36 students. All graduation information is as follows: Class of 2016 - 22 graduates; Class of 2017 – 29 graduates; Class of 2018 – 28 graduates; Class of 2019 – 32 graduates; Class of 2020 (anticipated) 34 students. There are two additional cohorts enrolled in our program: Class of 2021 (34) and Class of 2022 (36). We have matriculated a total of 230 students since beginning in 2014.

Our program remains committed to primary care and under-served populations, as is evident in our updated mission statement to “develop knowledgeable and caring physician assistants who practice competent patient-centered primary care with a focus on under-served populations.” The GWU PA admissions process allows students to express their primary care interests via the application process and interviews. Our institution is located in a medically underserved area of western North Carolina, and many of our diverse classes of students present from rural and underserved backgrounds. Two of our enrolled students are North Carolina foundation scholarship recipients. The scholarship was awarded to students committed to serving in underserved areas of our state upon graduation.

Our faculty members have practiced in primary care in underserved areas, and continue to practice medicine at least one day/week. One faculty is a National Health Service Corps graduate. Two of our faculty are primary care physicians with collective experience in rural family practice, family medicine in the VA, and hospice care. Our applicant pool and matriculates continue to become more diverse in their backgrounds. In the newest cohort, eighteen different states are represented by the students. While most of our faculty deliver the classroom/lab education for our PA students, we often utilize community PAs and physicians to supplement material, many of whom are primary care practitioners.

Our required Supervised Clinical Practice Experiences (SCPEs) include required core rotations in primary care, such as family practice, internal medicine, pediatrics, women’s health, mental health, general surgery, and emergency medicine. Every student is required to complete an Underserved Population SCPE, which reflects our commitment to the delivery of medicine to the underserved. Our first-year students conduct a healthcare screening for our underserved and homeless community members in conjunction with a local soup kitchen sponsored by the Cleveland County Baptist Association.

Our program has now graduated four cohorts, of which we track employment information. The statistics for graduating 2020 Cohort are unavailable at this time. The Gardner-Webb University Physician Assistant Studies program PANCE pass rate for first-time takers is as follows: 97% (2019), 100% (2018), 97% (2017), 91% (2016). The national first-time taker pass rate for the corresponding years is as follows: 93% (2019), 98% (2018), 97% (2017) and 96% (2016). The GWU PA Program five-year first-time taker average pass rate of 96% is equivalent to the national five-year first-time taker average of 96%.

Graduate employment for the 2018 Cohort:

- 28 graduates
- 100% work as Physician Assistants
- 12 (43%) practice in North Carolina
- 3 (11%) practice in North Carolina HRSA-defined Primary Care Areas of Practice:
  1. Family Medicine (1)
  2. Hospitalists/Internal Medicine (1)
  3. Pediatrics (0)
  4. Women's Health (1)

We are currently collecting graduate employment data for the 2019 Cohort.



# HIGH POINT UNIVERSITY

## Physician Assistant Studies

The mission of the High Point University Physician Assistant Studies program is to deliver a student-centered, experiential curriculum grounded in high academic and ethical standards. The program strives to develop compassionate PAs who are self-directed, lifelong learners prepared to provide evidence-based, patient-centered care as members of an interprofessional healthcare team.

The HPU PA program graduated the third cohort of 35 students in August 2019 and is welcoming the sixth incoming class which will consist of 45 students. Program curriculum both in clinical and didactic phases are designed towards preparing a generalist PA with skills well suited for primary care practice, including Family Medicine, Pediatrics, Internal Medicine, and Obstetrics/Gynecology.

During the Didactic Phase of the program students are heavily involved in primary care focused volunteer activities. Ongoing areas of service include, but are not limited to the following organizations:

- Community Clinic of High Point
- Westchester Country Day School – student sports physicals
- High Point Farmer’s Market
- Old Town Baptist Medical Clinic
- Forsyth County Emergency Medical Services
- Forsyth Jail and Prison Ministry
- Caring Services, Inc.
- World Relief Triad – High Point
- Salvation Army
- Lee Treadwell Society
- PAPA Fall Seminar
- High Point Cycling Classic
- University of North Carolina Health Professional Community Precepting Work Group
- Miles for Meals 5K
- Dusty Joy Foundation
- North Carolina Baptist Men’s Mobile Ministry
- American Red Cross

The HPU PA program is affiliated with various clinics that primarily serve patients in underserved populations. These locations expose students to a wide variety of patient care experiences offered during the clinical phase of the program. To ensure that students maintain a Primary Care knowledge base throughout the clinical year, in addition to standard End of rotation examinations, students must focus on completion of Kaplan Primary Care Questions during each elective rotation throughout the clinical year.

The High Point University PA Program Learning Outcomes clearly support preparing students for primary Care Practice and include:

1. Perform focused histories and physicals on patients across the life span and in a variety of health care delivery settings.
2. Formulate a differential diagnosis based upon the patient history and physical exam and recommend the proper diagnostic studies.
3. Diagnose common medical and behavioral problems likely to be seen in a primary care setting
4. Diagnose potentially life- or function-threatening medical and behavioral problems likely to be seen in a primary care setting.
5. Develop, implement and monitor management plans for emergent, acute, chronic or ongoing conditions including pharmacological and non-pharmacological approaches, surgery, counseling, therapeutic procedures and/or rehabilitative therapies.
6. Accurately and concisely communicate the findings of a given patient encounter in written and oral forms to all members of the health care team.
7. Demonstrate sensitivity and empathy regarding the emotional, cultural and socioeconomic aspects of the patient, the patient's condition and the patient's family.
8. Communicate in a patient-centered and culturally responsive manner to accurately obtain, interpret and utilize subjective information and construct a patient-centered management plan.
9. Provide advocacy and support to assist patients in obtaining quality care and in dealing with the complexities of health care delivery systems.
10. In all encounters, demonstrate professional behavior to the highest ethical and legal standards by recognizing professional limitations, then consulting with other health care providers and/or directing patients to appropriate community resources, as needed
11. Critically evaluate the medical literature in order to use current practice guidelines and apply the principles of evidence-based medicine to patient care.
12. Educate patients in health promotion and disease prevention and demonstrate a working knowledge of all tiers of preventive medicine in patient interactions.
13. Perform clinical procedures and interpret test results likely to be encountered in a primary care setting.

The High Point University PA Program identifies the following "Program Goals" with Outcome Measures and benchmarks from 2018 (final 2019 data analysis pending):

**Goal 1: Admit highly qualified applicants.**

**Outcome Measure A:** Matriculated student CASPA information: Cumulative Undergraduate GPA, Cumulative Undergraduate Science GPA, and GRE scores.

Benchmark: Matriculated student Cumulative Undergraduate GPA, Cumulative Undergraduate Science GPA, and GRE scores will meet or exceed national averages.

Data:

	Class of 2017 2014-2015 Cycle		Class of 2018 2015-2016 Cycle		Class of 2019 2016-2017 Cycle		Class of 2020 2017-2018 Cycle	
	HPU	National CASPA	HPU	National CASPA	HPU	National CASPA	HPU	National CASPA
Cumulative Undergrad. GPA	<b>3.63</b>	<b>3.55</b>	<b>3.72</b>	<b>3.56</b>	<b>3.72</b>	<b>3.57</b>	<b>3.74</b>	<b>3.59</b>
Cumulative Undergrad. Science GPA	<b>3.61</b>	<b>3.49</b>	<b>3.69</b>	<b>3.51</b>	<b>3.69</b>	<b>3.51</b>	<b>3.69</b>	<b>3.53</b>
GRE-Quantitative	<b>151.63</b>	<b>152.91</b>	<b>153.20</b>	<b>152.90</b>	<b>150.59</b>	<b>153.14</b>	<b>152.91</b>	<b>153.22</b>
GRE-Verbal	<b>155.42</b>	<b>153.60</b>	<b>153.33</b>	<b>153.86</b>	<b>150.53</b>	<b>153.89</b>	<b>153.36</b>	<b>153.86</b>

Analysis:

- HPU Class of 2017 attained benchmarks in all areas except GRE-Quantitative. The HPU result in the area below benchmark was very close to benchmark.
- HPU Class of 2018 attained benchmarks in all areas except GRE-Verbal. The HPU result in the area below benchmark was extremely close.
- HPU Class of 2019 attained benchmarks in both GPA areas but fell below the benchmark for GRE-Quantitative and GRE-Verbal.
- HPU Class of 2020 attained benchmark in both GPA areas but fell below the benchmark for GRE-Quantitative and GRE-Verbal. The HPU results in the areas below benchmark were very close to benchmark.

For the Class of 2020, the HPU matriculated students brought academic GPA performance above the national average. Incoming student GPA for each of the four classes of students shows a consistent trend of HPU meeting the benchmark. The GRE scores for the Class of 2020 fell somewhat below national averages in both areas and thus did not meet this benchmark. The Class of 2020 GRE results match up very similarly to Class of 2019 in relation to national averages. In the other two previous admission classes, one of the two GRE scores fell below national average. The trend identified is that we struggle to meet the benchmark in relation to GRE scores.

The GPAs have a higher weighting than GRE in our admissions evaluation process. This can explain why we consistently meet the benchmark in the GPAs but not the GREs. We increased our class size from 20 to 35 students between the Class of 2018 and Class of 2019, which is where we see the lower GRE scores. The average Academic Score (calculation of the GPAs and GRE scores) for the Class of 2020 is the highest it has been across the four admission years. The admitted students tend to perform very well in our PA Program, consistently pass PANCE on the first attempt, and find employment. Presently, we do not intend to change our admissions practices, rather we hope to attract more applicants with higher GRE scores as our program becomes more well-known for producing highly qualified graduates.

**Overall, the HPU PA Program is partially meeting the program established goal of recruiting highly “academically” qualified applicants.**

**Outcome Measure B:** Matriculated student prior healthcare experience.

Benchmark: Matriculated student mean healthcare experience will be at least 1,000 hours and greater than average level of patient care/responsibility. "Average" level of patient care/responsibility is 2 on a 1-4-point scale.

*Data:*

	Class of 2017	Class of 2018	Class of 2019	Class of 2020
Healthcare Experience – Average # of Hours	3,614	2,036	3,370	1,835
Healthcare Experience – Median # of Hours	1,393	2,002	2,153	1,314
Healthcare Responsibility Level	2.05	2.05	2.09	1.94

*Analysis:*

- HPU Class of 2017 attained both benchmarks related to healthcare experience.
- HPU Class of 2018 attained both benchmarks related to healthcare experience.
- HPU Class of 2019 attained both benchmarks related to healthcare experience.
- HPU Class of 2020 attained the first benchmark (total hours) but fell just below the benchmark in average level of patient care/responsibility.

The average and median healthcare experience and the level of healthcare responsibility for the Class of 2020 is lower than the three preceding admissions years. There was a notable drop from the Class of 2019 to the Class of 2020 in hours of healthcare experience. Over the four admission years, there has been a fluctuation of average and median healthcare experience but a rather constant level of healthcare responsibility. This is in contrast to the total number of applications to the PA program, which has increased every year. However, the class size increased from 20 to 35 students between the Class of 2018 and Class of 2019. Class size alone does not seem to account for the decrease in healthcare experience as the class size has remained the same over the past two years.

**Overall, the HPU PA Program is doing well in meeting the program established goal of recruiting highly qualified applicants related to previous healthcare experience.**

**Outcome Measure C:** Matriculated student admission interview performance.



Benchmark: Matriculated students will attain average admission interview scores of at least 85% of the possible points.

*Data:*

	Class of 2017	Class of 2018	Class of 2019	Class of 2020
Matriculated Student Average Admission Interview Score – Percent of Possible Points	94%	90%	90.5%	91.4%

Analysis:

- HPU Class of 2017 exceeded the program benchmark.
- HPU Class of 2018 exceeded the program benchmark.
- HPU Class of 2019 exceeded the program benchmark.
- HPU Class of 2020 exceeded the program benchmark.

The matriculated students in the PA Class of 2020 did well on their admission interviews. The average interview performance for the Class of 2020 is slightly higher than each of the two previous years, but not as high as the first admission year. The range of scores for the Class of 2020 is also comparable to the Class of 2019 scores. There has not been a significant difference between the admissions interview performance between the first three classes of students.

**Overall, the HPU PA Program is doing well in admitting highly qualified applicants related to admissions interviews.**

## **Program Goal 2: Deliver a curriculum that ensures all graduates possess the requisite knowledge and skills for entry to PA practice**

**Outcome Measure A:** Student, faculty and preceptor ratings of the students' preparedness and ability to perform the Program Learning Outcomes (PLO). Ratings are collected across multiple surveys that use a 5-point Likert scale where 5 = strongly agree. The following surveys are used to measure student preparedness and ability to perform Program Learning Outcomes (PLO): End of Didactic Student Survey, Faculty/Staff Survey, Preceptor Student Preparedness Survey.

**Benchmark:** Student, faculty and preceptor ratings will exceed 3.5 on the 5-point Likert scale for 100% of surveys.

*Data:* Information below reflects data from the most recent graduating class. Data is updated in the Spring of each year. Long-term analysis will include data from the previous 5 years.

#	Program Learning Outcomes	Class 2017 % of Surveys > 3.5 AVG	Class 2017 Range of Survey AVGs	Class 2018 % of Surveys > 3.5 AVG	Class 2018 Range of Survey AVGs
1	Perform focused histories and physicals on patients across the life span and in a variety of health care delivery settings. (P)	100%	3.8 - 4.5	100%	4.6 - 4.7
2	Formulate a differential diagnosis based upon the patient history and physical exam and recommend the proper diagnostic studies. (C)	100%	4.2 - 4.7	100%	4.5 - 4.9
3	Diagnose common medical and behavioral problems likely to be seen in a primary care setting. (C)	100%	4.3 - 4.7	100%	4.3 - 4.9
4	Diagnose potentially life- or function-threatening medical and behavioral problems likely to be seen in a primary care setting. (C)	100%	4.4 - 4.8	100%	4.5 - 4.8
5	Develop, implement and monitor management plans for emergent, acute, chronic or ongoing conditions including pharmacological and non-pharmacological approaches, surgery, counseling, therapeutic procedures and/or rehabilitative therapies. (C)	100%	4.2 - 4.5	100%	4.2 - 4.6
6	Accurately and concisely communicate the findings of a given patient encounter in written and oral forms to all members of the health care team. (P)	100%	4.0 - 4.7	100%	4.0 - 4.6
7	Demonstrate sensitivity and empathy regarding the emotional, cultural and socioeconomic aspects of the patient, the patient's condition and the patient's family. (A)	100%	4.6 - 4.7	100%	4.2 - 4.6
8	Communicate in a patient-centered and culturally responsive manner to accurately obtain, interpret and utilize subjective information and construct a patient-centered management plan. (A)	100%	4.4 - 4.7	100%	4.4 - 4.6
9	Provide advocacy and support to assist patients in obtaining quality care and in dealing with the complexities of health care delivery systems. (A)	100%	4.5 - 4.5	100%	4.0 - 4.6
10	In all encounters, demonstrate professional behavior to the highest ethical and legal standards by recognizing professional limitations, then consulting with other health care providers and/or directing patients to appropriate community resources, as needed. (A)	100%	4.7 - 4.9	100%	4.3 - 4.8
11	Critically evaluate the medical literature in order to use current practice guidelines and apply the principles of evidence-based medicine to patient care. (C)	100%	4.4 - 4.9	100%	4.1 - 4.6
12	Educate patients in health promotion and disease prevention and demonstrate a working knowledge of all tiers of preventive medicine in patient interactions. (P)	100%	4.5 - 4.8	100%	4.3 - 4.8
13	Perform clinical procedures common to primary care, including: rapid strep testing, urinalysis, collection of culture specimens, injections,	100%	4.0 - 4.9	100%	4.1 - 4.6

	wound dressings, venipuncture, interpretation of EKGs, interpretation of chest and skeletal X-rays, starting IVs, and laceration repair. (P)				
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Analysis:

HPU Class of 2017 meets the program benchmark with 100% of survey ratings exceeding 3.5 on the 5-point Likert scale.

HPU Class of 2018 meets the program benchmark with 100% of survey ratings exceeding 3.5 on the 5-point Likert scale

**Overall, the HPU PA Program curriculum is meeting the program established goal of ensuring graduates possess the knowledge and skills required for entry to PA practice based on student, faculty and preceptor surveys.**

**Outcome Measure B:** Success on Summative Evaluations

Benchmark: 85% of students pass all five components of the program summative examination after the second attempt

*Data:* Information below reflects data from the most recent graduating class. Data is updated in the Spring of each year. Long-term analysis will include data from the previous 5 years.

High Point University Student Performance	Class of 2017	Class of 2018	Cumulative Data (2 years)
Summative Evaluation: Pass on 1st or 2nd Attempt	89.47%	85.71%	87.59%
Meet Benchmark	Yes	Yes	Yes

Analysis:

HPU Class of 2017 exceeded the program benchmark.

HPU Class of 2018 exceeded the program benchmark.

Long-term analysis of 5-year data not available at this time. Analysis of 2-year data demonstrates that student performance on the Summative Evaluation exceeded the program benchmark.

**Overall, the HPU PA Program curriculum is meeting the program established goal of ensuring graduates possess the knowledge and skills required for entry to PA practice based on successful performance on Summative Evaluations.**

**Outcome Measure C:** PANCE first-time test take pass rates.

Benchmark: Each cohort achieves a First Time Taker PANCE Pass Rate at or above the 5-year running average national pass rate.

*Data:* Information below reflects data from the most recent graduating class. Data is updated in the Spring of each year. Long-term analysis will include data from the previous 5 years.

Class	Number of students who passed on first attempt	Number of First Time Takers	Program First Time Taker Pass Rate	Five Year National First Time Taker Average	Meets Program Benchmark
Class of 2017	18	19	95%	96%	No
Class of 2018	21	21	100%	96%	Yes

Analysis:

In 2017 program did not meet the benchmark with only one student out of 19 failing the initial attempt. Upon review of PANCE outcomes and student performance across the curriculum on standardized tests, the program incorporated formative assessments during the didactic phase and program OSCE assessments during the clinical phase of the program. Additionally, the program instituted evaluation of trends in student performance between cohorts to identify at risk students and provide early intervention to facilitate success in meeting this benchmark.

In 2018 the program met the benchmark with all students passing PANCE on the initial attempt.

**Overall, the HPU PA Program curriculum is meeting the program established goal of ensuring graduates possess the knowledge and skills required for entry to PA practice with 39 out of 40 students passing the PANCE on the first attempt.**

### **Program Goal 3: Educate physician assistants in a generalist model prepared to practice in a variety of health care settings and disciplines**

**Outcome Measure:** Student performance on discipline-specific PAEA EOR™ Exams

*Benchmark:* Each cohort will meet or exceed the national average for each PAEA EOR™ Exam

*Data:* Information below reflects data from the most recent graduating class and includes only first attempt test results. Data is updated in the Spring of each year. Long-term analysis will include data from the previous 5 years.

PAEA EOR™ Exams	Class of 2017		Class of 2018	
	Class Average Z-score	At or Above National Average?	Class Average Z-score	At or Above National Average?
Emergency Medicine	0.47	Yes	0.53	Yes
Family Medicine	0.51	Yes	0.06	Yes
General Surgery	0.21	Yes	0.35	Yes
Internal Medicine	0.31	Yes	0.56	Yes
Pediatrics	0.59	Yes	0.71	Yes
Psychiatry & Behavioral Health	0.61	Yes	0.66	Yes
Women's Health	0.42	Yes	0.40	Yes

#### Analysis:

HPU Class of 2017 exceeded the program benchmark in each specialty examination.

Overall, the HPU PA Program is doing well in meeting the program established goal of educating physician assistants in a generalist model prepared to practice in a variety of health care settings and disciplines.

HPU Class of 2018 exceeded the program benchmark in each specialty examination. While each benchmark was met it was noted that there was a significant decrease in the overall class performance on the Family Medicine EOR™ exam. The program will continue to monitor this area of performance to identify potential trends so that curricular changes may be implemented, if needed, to ensure that students are prepared to practice in a variety of health settings and disciplines.

Long-term analysis of 5-year data not available at this time. Analysis of 2-year data demonstrates that student performance on the EOR™ exams exceeded the program benchmark.

**Overall, the HPU PA Program is meeting the program established goal of educating physician assistants in a generalist model prepared to practice in a variety of health care setting and disciplines based on meeting or exceeding the national average for each PAEA EOR™ Exam**

## **Program Goal 4: Engage faculty and students in active and on-going professional, scholarly, and community engagement activities**

**Outcome Measure A:** Faculty participation as committee members and leaders in local, state and national PA professional organizations.

*Benchmark:* Faculty will provide volunteer service to, serve on committees, or hold leadership roles in 66% or more of the six applicable local, state, and national PA professional organizations.

*Data:*

For 2017, HPU PA faculty members currently provide volunteer service to, serve on a committee, or hold leadership roles in all six professional organizations (100%)

For 2018, HPU PA faculty members currently provide volunteer service to, serve on a committee, or hold leadership roles in all six professional organizations (100%). Examples include:

American Academy of Physician Assistants (AAPA)

- Elections Committee
- House of Delegates: Reference Committee
- Journal article Reviewer

Physician Assistant Education Association (PAEA)

- Lead Facilitator-Faculty Skills 101
- End-of-Rotation Exam Workshop and Committee

North Carolina Academy of PAs (NCAPA)

- Executive Board, Secretary
- Professional Development Review Panel
- North Carolina Representative to the AAPA House of Delegates
- Optimal Team Practice Task Force
- Winter Conference Task Force
- Peer reviewer for Winter CME conference poster presentation submissions

Piedmont Association of Physician Assistants (PAPA)

- Secretary

Accreditation Review Commission for the Physician Assistant (ARC-PA):

- Site Visitor

National Commission on Certification of Physician Assistants (NCCPA):

- Orthopedic Surgery Certificate of Added Qualifications (CAQ) Test-Item Writing Committee

Analysis

For both 2017 and 2018 the faculty excelled in their ability to provide service to, serve on committees, and hold leadership roles that support mentoring students' in similar student-level activities and inform the program regarding current trends in the profession. They have exceeded the program-established benchmark of 66%.

**Overall, the HPU PA Program is meeting the program established goal of engaging faculty and students in active and on-going professional, scholarly, and community engagement activities as evidenced by faculty participation as committee members and leaders in local, state and national PA professional organizations.**

**Outcome Measure B:** Program Peer-Reviewed Presentations and Publications

**Benchmark:** The program will have a minimum of 6 peer-reviewed presentations or publications annually.

**Data:**

For the calendar year of 2017, PA program faculty had a total 20 of peer-reviewed presentations and journal articles.

For the calendar year of 2018, PA program had a total 23 of peer-reviewed presentations and publications. A list of this scholarship follows.

- Acute Psychosis Patient in Law Enforcement Custody: Use of Standardized Patient for an Immersive Mental Health Simulation. International Meeting on Simulation in Healthcare Rapid Fire Presentation. Los Angeles, CA, January 16, 2018.
- Do Mid-Crown Enamel Formation Front Angles Reflect Factors Linked to the Pace of Primate Growth and Development? The Anatomical Record January 2018, 301 (1), 125-139.
- Rheumatology Board Review. North Carolina Academy of Physician Assistants - 32nd Annual NCAPA Recertification Exam Review Conference. Durham, NC, February 24, 2018
- Infectious Disease Board Review. North Carolina Academy of Physician Assistants 32<sup>nd</sup> Annual NCAPA Recertification Exam Review Conference. Durham, NC, February 27, 2018.
- Dermatology Board Review, Non-Infectious rashes and neoplasms. North Carolina Academy of Physician Assistants 32nd Annual NCAPA Recertification Exam Review Conference. Durham, NC, February 27, 2018.
- Dental Topography and Food Processing in Wild-Caught Costa Rican Alouatta. American Journal of Physical Anthropology. April 2018. 165, 198-198.
- Active Learning. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA). Washington DC, April 23, 2018.

Student Evaluation, Improving Your Multiple-Choice Items. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA). Washington DC, April 24, 2018.

- How to Navigate the Road to Promotion and Tenure. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA). Washington DC, April 25, 2018.
- Thriving in the Academic Environment. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA). Washington DC, April 25, 2018.
- The North Carolina PA Program Directors Council – Collaboration, Collegiality, Scholarship; The Journal of PA Education (JPAE), June 2018.
- Adaptive wear-based changes in dental topography associated with atelid (Mammalia: Primates) diets. Biological Journal of the Linnean Society June 28, 2018, 124 (4), 584-606.
- Professional Practice for Physician Assistants. Buffalo, NY: RPSS Publishing; 2018
- Menopause. Physician Assistant Clinics: July 2018, Volume 3, Issue 3 , 373 – 383.
- Fibromyalgia; Beyond 11 tender points! North Carolina Academy of Physician Assistants 2018 Summer CME Conference. Myrtle Beach, NC, August 21, 2018.
- Abnormal uterine bleeding. Journal of the American Academy of PAs: September 2018 - Volume 31 - Issue 9 - 47–48.
- Oblique human symphyseal angle is associated with an evolutionary rate-shift early in the hominin clade. Journal of human evolution October 1, 2018, 123, 84-95.
- Fibromyalgia; Beyond 11 tender points! Tennessee Academy of Physician Assistants Fall Fest 2018 CME Conference: Gatlinburg, TN, October 8, 2018.

- Syllabus Preparation. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA) Annual forum. Anaheim, CA, October 22, 2018.
- Student Evaluation, Improving Your Multiple-Choice Items. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA) Annual forum. Anaheim, CA, October 23, 2018.
- Course Management. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA) Annual forum. Anaheim, CA, October 23, 2018.
- How to Navigate the Road to Promotion and Tenure. Faculty Skills 101 Certificate Program Physician Assistant Education Association (PAEA) Annual forum. Anaheim, CA, October 23, 2018.
- Evaluating Student Competency: Formative and Summative Evaluations. Physician Assistant Education Association (PAEA) Annual Forum Presentation. Anaheim, CA, October 25, 2018.
- The influence of leaping frequency on secondary bone in cercopithecoid primates. The Anatomical Record. October 28, 2018.

#### Analysis

Faculty have exceeded the program-established benchmark of 6 peer-reviewed presentations or publications in both 2017 and 2018.

**Overall, the HPU PA Program is meeting the program-established goal of engaging faculty and students in active and on-going professional, scholarly, and community engagement activities as evidenced by the volume of program Peer-Reviewed Presentations and Publications.**

**Outcome Measure C:** Faculty and Student participation in community service activities.

**Benchmark:** 100% of Faculty and Students will participate in community service activities.

#### Data:

- Class of 2018: 100% participation
- Class of 2019: 97% participation – one student out of class of 34 did not participate in any community service in 2018
- Class of 2020: 94% participation – two students out of a class of 35 did not participate in any community service in 2018
- Faculty: 100% participation

Examples of agencies served include:

- Community Clinic of High Point
- Westchester Country Day School – student sports physicals
- High Point Farmer's Market
- Old Town Baptist Medical Clinic
- Forsyth County Emergency Medical Services
- Forsyth Jail and Prison Ministry
- Caring Services, Inc.
- World Relief Triad – High Point
- Salvation Army
- Lee Treadwell Society
- PA Week
- PAPA Fall Seminar
- High Point Cycling Classic



- University of North Carolina Health Professional Community Precepting Work Group
- Wake Forest Baptist Health High Point Medical Center Board of Trustees
- Martin Luther King, Jr. Day of Service
- Miles for Meals 5K
- High Point University Community Christmas
- Dusty Joy Foundation
- North Carolina Baptist Men's Mobile Ministry
- American Red Cross
- AWSUM
- Tornado Relief Food and Supplies Collection
- HPU High School Event – Blood Pressure Training

*Analysis:*

In 2017 faculty and students excelled in their individual commitment to community engagement and succeeded in meeting the established benchmark of 100%.

In 2018 faculty excelled in their commitment to community engagement and succeeded in meeting the established benchmark of 100%. While there was not 100% participation from students, there was ≥94% of students in both cohorts who were actively engaged in community service. The program will continue to collect data on student engagement within the community.

**Overall, the HPU PA Program is meeting the program established goal of engaging faculty in active and on-going professional, scholarly, and community engagement activities as evidenced by the volume of faculty and student participation in community service activities.**



## PHYSICIAN ASSISTANT PROGRAM

Methodist University is located in the city of Fayetteville in Cumberland County, North Carolina, which lies in the southern-central portion of the state. Since the graduation of its inaugural class in 1998, Methodist University Physician Assistant Program (MUPAP) continues to make an impact to offset the shortage of primary care providers in the southeastern parts of North Carolina, nationally, and now internationally.

MUPAP's plan to increase the number of PA's practicing in primary care includes multiple projects starting with student recruitment. The program's emphasis on recruiting students who are underrepresented minorities (URM) and/or who are from disadvantaged backgrounds has helped build stronger relationships with universities with an American Indian affiliation and Historically Black Colleges and Universities (HBCUs). By adding diversity to our program, we feel it has enhanced the academic experience for all students and have noted through graduation data that URM students and students from disadvantaged backgrounds have a strong desire to return to their communities as providers and mentors, and to practice in primary care areas. Our grant opportunities, retention of faculty who share similar backgrounds, targeted recruiting, and making enrolling a diverse cohort a published goal of the program has significantly and successfully progressed the program's impact on our community. In 2011 and 2016, the program was a recipient of two Health Resources and Services Administration (HRSA) grants: Expansion of PA Training (EPAT) (\$1.18 million) and Students from a Disadvantaged Background Scholarship (SDS) (\$1.59 million). Since 2012, the grants have provided tuition assistance to 57 students. Unlike the SDS grant, the EPAT grant did not have as much emphasis on recruiting URM or disadvantaged students; rather its' focus was on selecting students who had financial need and a desire to enter into primary care medicine. As a result of the EPAT grant, the program recognized many of our students who "fit the mold" of a primary care provider in our community came from a minority or disadvantaged background. Most importantly, we recognized how they enhanced the learning environment of their classmates and faculty and the influence these students (now graduates) made on the next generation of potential physician assistant students from their communities; thus began the gradual change in recruiting efforts, the application review process, and academic support services within the program. The SDS grant places heavy emphasis on recruiting and enrolling URMs and/or students from disadvantaged backgrounds, has strengthened our desire to nurture our relationships with universities with an American Indian affiliation (University of North Carolina-Pembroke [UNCP]), HBCUs, and high schools located in underserved counties that surround the program.

All students attend courses where education about the importance of primary care work is emphasized. Students also participate in "Clinical Experience" days where weekly, they spend time in primary care offices, and various other interdisciplinary experiences in Cumberland County. The

SDS students have an expected outcome that recipients will work in primary care upon graduation, preferably in an underserved or rural area. There are activities and planned rotations for the SDS students that we use to achieve our outcomes. MUPAP has mandatory advising sessions with SDS recipients in the didactic year where they participate in round table discussions and submit a one page reflection paper about barriers they have overcome to get to PA school, barriers they may currently be facing as a student, barriers that they will face in their communities as a provider, and the impact the SDS scholarship has had on their education.

Throughout clinical training, SDS recipients are placed, when available, in rural and/or underserved communities for their primary care rotations. Our current community based rotations have been established with local medical practitioners, some of whom have also invested time in the didactic instruction of the students. Many of the sites are small, single practitioner facilities that have adapted to the rural setting. Some of these facilities have in-house laboratory, radiography capability with remote interpretation by a radiologist, and trauma treatment areas to accommodate for the increased travel time that is needed to get to a large facility. This has demonstrated to our students the resourcefulness and independence needed to be a rural medical practitioner. MUPAP students complete at least 20 weeks of training in rotations dedicated to primary care areas, and SDS recipients are required to track the number of patient encounters and the number of patient contact hours totaled while on their Family Medicine, Pediatric, and Internal Medicine rotations. The Classes of 2018 (5 recipients) and 2019 (7 recipients) totaled 15,001 patients and 12,048 hours of patient contact hours throughout their primary care rotations. At the time of this report, the Class of 2020 (9 recipients) have just begun their clinical rotations, and have totaled 910 patient encounters and 569 hours of patient contact in these areas. Exposure to clinical rotations and mentorship with providers who are practicing primary care in rural and underserved areas are important factors that influence a students' decision to enter into primary care.

At the conclusion of the program, SDS recipients who are nearing graduation and first year SDS recipients participate in a combined advising session. Graduating recipients reflect on not only the financial impact of their scholarship, but on the impact of the patient populations they encountered during their clinical year and their plans after graduation. At the time of this report a total of 12 SDS recipients have graduated, passed the PA National Certifying Exam on the first attempt, and over 80% of SDS graduates have secured or have intentions to work in primary care areas. As noted above, the SDS funding will end in 2020. However, the noteworthy changes this and the EPAT grant have had on all aspects of our program will remain in place going forward. We anticipate that the program's targeted recruiting efforts have created a pipeline of students and mentors, especially in the Southeastern parts of NC, who may not have ever thought attending PA school was an option due to their race or environment.

There are three areas of action that would help recruit, train and retain a qualified and adequate number of primary care providers in N.C. First, targeted recruiting to students in rural and underserved areas. In our experience, students from these areas remain loyal to providing medicine to similar communities. Second, support of faculty members in health care programs with loan repayment or forgiveness. There is a shortage of PA faculty nationwide, and retention of quality educators can be difficult. A major barrier is salary, as cited in the Physician Assistant Education Association program report "By the Numbers: Program Report 34 (2017-2018)." Support of faculty through loan repayment of educational loans could be a significant incentive.

Third, support of clinical preceptors practicing in medically underserved areas. PA programs across the state experience difficulty recruiting and maintaining preceptors. Support through education, payment, rotation planning, and student housing is vital.

In summary, MUPAP was built with the goal of filling the need for local primary care providers. As demonstrated above, we have met our goal and plan to continue to fill that role in the future.



## **Mission**

The mission of the Pfeiffer University Master of Science in Physician Assistant Studies is to educate servant leaders of diverse backgrounds as Physician Assistants who will provide exceptional healthcare in an inter-professional setting, serving rural medically underserved populations through community involvement, public health policy and advocacy.

## **Vision**

The vision of the Pfeiffer University Master of Science in Physician Assistant Studies is to be recognized for its commitment to excellence in Physician Assistant education, scholarly activity and servant leadership in the areas of health disparities and social equity.

## **Values**

In keeping with the Pfeiffer University Values the Master of Science in Physician Assistant Studies will abide by the following tenets:

- Educational excellence in a learner-centered community.
- Realization full potential
- Inclusion of diverse learners in a caring, accessible community - the Pfeiffer Family.
- Spiritual heritage and faith formation
- Integrity and dignity

## **Goals**

One of the core goals of the program is to provide opportunities for students to interact with patients from diverse cultural and economic backgrounds, which prepares and inspires graduates to provide compassionate, culturally sensitive, patient-centered, evidence-based healthcare in medically underserved communities locally, nationally and globally. By doing so, the program aims to encourage students to pursue a career on Primary Care. The program will be monitoring the successful achievement of this goal through graduate and employer surveys.

## **Program Description**

### ***Overview***

The Pfeiffer University Master of Science in Physician Assistant Studies (MS-PAS) program is a 27-month continuous residential program; committed to creating an academic experience known for its excellence in Physician Assistant education, scholarly activity and servant leadership in the areas of health disparities and social justice.



The Pfeiffer University MS-PAS program will have a strong emphasis on the unequal distribution of health, illness, disease, suffering and death by social status, where social status includes race/ethnicity, sex/gender, socioeconomic status, geographical region, and other factors locally, nationally and globally. Students will receive instruction in health policy, advocacy and community interventions best practices aimed at reducing health disparities.

The students will participate in collaborative service learning experiences through community initiatives such as Project S.E.E.D (Serving Everyone Embracing Diversity) an interdisciplinary community service initiative where the students identify a specific healthcare disparity within the community, design and implement a self-sustaining program that addresses the disparity and empowers the community. Through these initiatives the students will gain real life experience in culturally competent healthcare for the underserved.

Students will be evaluated and expected to meet the highest standards of competency in the six areas of Competencies for the Physician Assistant Profession: Medical Knowledge, Interpersonal and Communication Skills, Patient Care, Professionalism, Practice Based Learning and Implementation and System-Based Practice throughout both the didactic and clinical phases of the program. Students will be evaluated using a variety of assessment tools such as multiple choice questions, verbal and written case presentations, simulation activities, objective structured clinical examinations (OSCEs), short essays, reflection journals, research projects and clinical preceptor evaluations.

### ***Didactic Phase***

The program begins with a 15 month rigorous didactic phase which includes robust instruction in anatomy, physiology, pathophysiology, pharmacology, pharmacotherapeutics, clinical laboratory and diagnostic studies, physical diagnosis, clinical medicine, behavioral medicine, community medicine, clinical research design, medical writing, evidence based medicine, legal and ethical issues in medicine, and cultural issues in medicine. Instruction in professionalism, patient safety and advocacy are interwoven throughout the curriculum. The program will provide instruction on the four core competencies for interprofessional collaborative practice: Values/Ethics for Interprofessional Practice, Roles/Responsibilities, Interprofessional Communication, Teams and Teamwork through creative and innovative active learning strategies such as interdisciplinary team based and simulation learning. The students will participate in interprofessional experiences alongside nursing, health and exercise science, occupational therapy, marriage and family therapy and health administration students.

### ***Clinical Phase***

The didactic phase is followed by a 12-month clinical phase where the students will engage in well over 2100 hours of supervised clinical practice experiences (SCPEs). Students will participate in seven core SCPEs Internal Medicine, Family Medicine, Pediatrics, Prenatal Care and Women's Health, Surgery, Emergency Medicine, Psychiatry and two elective SCPEs (all SCPEs are five weeks long).



At the end of each SCPE the students return to the main campus and participate in a three-day Clinical Seminar. Clinical Seminar activities include an end of SCPE examination, OSCE, focused National Commission on Certification of Physician Assistants (NCCPA) board review with case discussions, an NCCPA-type practice exam, and round table discussions on topics regarding Physician Assistant practice.

### ***Scholarly Concentrations***

In response to the critical need of health care providers in the areas of Mental Health and Rural Medicine the Pfeiffer University MS-PAS program is offering Scholarly Concentrations in Behavioral and Mental Health and in Rural Medicine.

- **Behavioral and Mental Health**

Focusing on application and integration of clinical concepts in Behavioral and Mental health cases; the scholarly concentration will build on the knowledge acquired during the didactic phase of the program. It will provide in-depth content about the epidemiology, evaluation and diagnosis, clinical neuroscience including psychiatric genetics, psychopharmacology, psychotherapies, age issues, gender issues, culture issues (e.g., religion and spirituality), comorbidity, risk issues—medical/legal risk management of simple and complex chronic and acute behavioral and mental disorders across the lifespan. The Scholarly Concentration in Behavioral and Mental Health is in addition to the core coursework of the Pfeiffer University MS-PAS program; and will not extend the duration of the program.

Scholarly Concentration in Behavioral and Mental Health consists of four modules:

- Module 1- Summer A Semester of Clinical Phase  
Integration of Behavioral and Mental Health in Primary Care
- Module 2- Summer B Semester of Clinical Phase  
Child and Adolescent Behavioral and Mental Health
- Module 3- Fall Semester of Clinical Phase  
Adult Behavioral and Mental Health
- Module 4- Spring Semester of Clinical Phase  
Addiction Medicine

Students participating in the Scholarly Concentration in Behavioral and Mental Health are required to:

- Attend weekly scholarly seminars on topics in Behavioral and Mental Health during the clinical phase of the program
- Participate in 10 weeks of supervised clinical experiences (1 core and 1 elective) in Behavioral and Mental Health (> 500 contact hours)
- Deliver an oral case presentation after elective during end of rotation days.
- Complete the graduate research project on a Behavioral and Mental Health topic.

- **Rural Medicine**

Focusing on application and integration of clinical concepts in Family and Internal Medicine; the scholarly concentration will build on the knowledge acquired during the didactic phase of the program. It will provide in-depth content about the epidemiology, evaluation and diagnosis, clinical medicine including genetics, pharmacology, age issues, gender issues, culture issues (e.g., religion and spirituality), comorbidity, risk issues—medical/legal risk management of simple and complex chronic and acute disorders across the lifespan from a Rural Medicine point of view. The Scholarly Concentration in Rural Medicine is in addition to the core coursework of the Pfeiffer University MS-PAS program; and will not extend the duration of the program.

Scholarly Concentration in Rural Medicine consists of four modules:

- Module 1- Summer A Semester of Clinical Phase  
Integration of Clinical Concepts in Rural Health Practice
- Module 2- Summer B Semester of Clinical Phase  
Advanced Clinical Skills in Rural Health Practice
- Module 3- Fall Semester of Clinical Phase  
Rural Health Policy and Advocacy
- Module 4- Spring Semester of Clinical Phase  
Administration and Management of a Rural Health Practice

Students participating in the Scholarly Concentration in Rural Health are required to:

- Attend weekly seminars on topics in Rural Health during the clinical phase of the program
- Participate in 10 weeks of supervised clinical experiences (1 core and 1 elective) in a rural setting (> 500 contact hours)
- Deliver an oral case presentation after each elective during end of rotation days.
- Complete the graduate research project on a Rural Health topic.

### **Research**

A graduate research project is a requirement for graduation. The students may choose one of two options for the graduate research project. The first option is a three part individual graduate research project which entails: a written case report, a literature review related to the case report, and an oral presentation of the case and key findings of the literature review. The second option is a collaborative graduate research project where a small group of students (three students maximum) identify a health disparity in a specific community; conduct a literature review on the subject matter, design, and implement a community health initiative. The report (written and oral presentation) includes a literature review, a description of the project and its outcomes.

### **Primary Care Plan**

- **Program Focus**

The program is designed to educate exceptional Physician Assistants who will have the requisite knowledge





and skill set to work in Primary Care, especially in rural communities of North Carolina.

- ***Scholarly Concentrations***

In response to the critical need of health care providers in the areas of Mental Health and Rural Medicine the Pfeiffer University MS-PAS program is offering Scholarly Concentrations in Behavioral and Mental Health and in Rural Medicine.

- ***Supervised Clinical Practice Experiences in Rural Communities***

The program has secured clinical sites in primarily rural communities of North Carolina. The exposure to these communities will open opportunities for institutions to recruit students after graduation.

- ***Project S.E.E.D. (Serving Everyone Embracing Diversity)***

- **Community Health Initiative**

- This is an interdisciplinary community service initiative where the PA students identify a specific healthcare disparity within the community, design and implement a self-sustaining program that addresses the disparity and empowers the community. Through these initiatives the students will gain real life experience in culturally competent healthcare for the underserved in North Carolina.

- **Next Generation**

- This is a mentoring program that supports high school students in their education goals and seeks to ensure that they are well poised to be selected into a Physician Assistant program. Physician Assistant students and faculty target high school students in predominantly minority and environmentally disadvantaged communities, recruit interested students into a Pre-Physician Assistant course of study, mentor them through their undergraduate studies and guide them through the graduate school application and interview process. The goal is to increase retention of minority and environmentally disadvantaged students in their undergraduate course of study, thus increasing diversity in the clinical health science graduate applicant pool. *Project S.E.E.D.-Next Generation* is committed to ensuring the successful passage of minority and environmentally disadvantaged students of North Carolina into the Physician Assistant profession through effective mentorship.

**What actions should we as a state commit to over the next two years to ensure that we recruit, train and retain a qualified and adequate number of primary care providers in NC?**

- **Advocate for Optimal Team Practice (OTP)-Modernization of Physician Assistant Practice in North Carolina**

- Optimal Team Practice reemphasizes the PA profession's commitment to team-based care and reaffirms that the degree of collaboration between PAs and physicians should be determined at the practice level.

- It also supports the removal of state laws and regulations that require a PA to have and/or report a supervisory, collaborating or other specific relationship with a physician in order to practice.
- In addition, the new policy advocates for the establishment of autonomous state boards with a majority of PAs as voting members to license, regulate and discipline PAs, or for PAs to be full voting members of medical boards.
- Finally, the policy says that PAs should be eligible to be reimbursed directly by public and private insurance for the care they provide.

Physician Assistants are educated and well equipped to provide exceptional healthcare without restrictive and outdated laws. Physician Assistants seek out states like West Virginia, Virginia, Tennessee, South Carolina and Florida where OTP has been implemented in order to exercise their profession at the top of their abilities. If OTP is implemented in North Carolina it could result in retention of PAs in the state.

- **Advocate for State and Federal funding to supplement the cost of supervised clinical practice sites.**
  - Clinical sites and preceptors are requiring payment for their services as preceptors for PA students. The cost can range from \$500.00 to \$1500 per rotation per student. PA programs and students shoulder the cost of clinical rotations resulting in increased financial burden on students and programs.
  - This will increase the number of Primary Care clinical sites especially in rural communities where students can rotate and be exposed to the rewards of practicing Primary Care.
- **Advocate for State and Federal Tax incentives for clinical preceptors**
  - This will increase the number of Primary Care clinical sites especially in rural communities where students can rotate and be exposed to the rewards of practicing Primary Care.
  - The state of Georgia was one of the first states to implement tax incentives with remarkable success.
- **Advocate for increasing number of available positions in healthcare facilities offering student loan repayment programs**
  - Loan repayment programs are a major incentive for retention of Primary care providers including PAs.



UNC  
SCHOOL OF MEDICINE

THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

DEPARTMENT OF ALLIED HEALTH SCIENCES  
PHYSICIAN ASSISTANT PROGRAM

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Hugh Tilson  
Director, NC Area Health Education Centers Program  
The University of North Carolina at Chapel Hill  
Chapel Hill, NC 27599-7165

Dear Mr. Tilson,

Thank you for this opportunity to report on the measures the UNC Physician Assistant Program has implemented to augment the number of physician assistant (PA) students who will eventually choose to practice in rural and underserved areas of our state. As you may know, our program was missioned to address this need at its inception. A commitment to primary care is central in our mission statement. Our recruiting and advertising for the program is also crafted to appeal to students who either come from rural areas and want to return to them, or who have a desire to serve in rural and underserved areas after they finish training. We have information sessions that emphasize this. As you know in this day of age, the primary medium for dissemination of program information is web-based. Our web site extensively features our primary care and rural emphasis, and it does so in multi-media.

Our commitment to training rural providers starts with recruitment. From the pool of prospective students, we carefully scrutinize backgrounds, and we recruit students from rural areas, knowing that they are more likely to return to these areas when they complete their training. We also focus on recruiting veterans because they tend to live in more rural areas of the state and are likely to return to their communities once they complete their training. Through the generous support of donors (BCBS NC and The Kenan Trust), we are also able earmark substantial scholarship funds to these “rurally oriented” students.

Once enrolled in our program, we have a very strong focus on primary care. The curriculum is designed around it, and the message is strong and recurrent. For example, each student is responsible for doing a community health assessment project focused on one of North Carolina’s 100 counties. The students are asked to approach the project from the perspective of social determinants of health and unmet healthcare needs. They do this early in their first year. Also starting in the first year, students have opportunities to do service learning projects in rural areas of the Southeast. Once in their second year of training, the program places students in a variety of rural health care settings—clinical and hospitals—for their clinical rotations.

To date, the PE program has had numerous success stories of graduated students who have returned to practice in their local rural communities in North Carolina and also the surrounding southern states. We would be happy to share details of the students with you.

Moving forward, we have recently initiated a project to create rural PA residencies throughout the state. We hope to create a 1 to 2-year residency that will train PAs in primary care within rural clinics. We envision training cohorts of 8 to 12 residents. We are collaborating with NC AHEC, Greensboro AHEC, SEAHEC, and MAHEC. We are very excited about this initiative. In addition, the coming year will see the expansion of service learning efforts in rural areas. We received a donation from the Herring Family Foundation to do a comprehensive free clinic in Wilkes, County through the national Remote Area Medical (RAM) organization.

In summary, we believe that our program philosophy, recruiting, scholarship support, curriculum, clinical experiences, and future innovations position the UNC Physician Assistant Program as a leader in addressing the shortage of primary care providers in rural North Carolina. Please let us know if you have questions.



The Wingate University PA Program entered its inaugural class on the main campus in Wingate, NC in August 2008 and a smaller cohort of students in Hendersonville, NC in August 2013. Both sites are in close proximity to medically underserved and rural populations.

The Wingate PA program is 27 months in length: 3 didactic semesters and 4 semesters of clinical rotations. As with the majority of PA programs, primary care is the foundation of the student's education. Courses in the curriculum that provide this foundation at Wingate include 3 semesters of clinical medicine and specific courses in women's health, pediatrics and emergency medicine.

Each of the 8 mandatory clinical rotations are 5 weeks long and include 2 in ambulatory care, 1 each in Pediatrics, Women's Health, General Surgery, Emergency Medicine and Psychiatry/Behavioral Health. There are 2 elective rotations as well.

The 5-year first-time PANCE pass rate for the WU PA program is 98%.

Our close proximity to rural populations at both campus sites has been a resource for clinical rotation sites that provided our students with valuable experiential learning related to rural health, population health and disparities. Over time however, the number of rotations in these areas have decreased. (see below)

The home page of our PA website has links to the National Health Services Corps and NC Office of Rural Health which provide access for viewing rural health scholarship opportunities even before matriculation into the program.

A collaborative effort between Wingate University and the Community Health Services of Union County (CHSUC) provides our program with 8 clinical rotations each year. CHSUC is a full service clinic that provides medical care, at no cost, to individuals of Union County without medical insurance. The rotation is an exceptional opportunity for students to learn how the disparity in health care affects the patient and their families. The primary provider at the clinic is a PA.

The health professions programs at Wingate have an interprofessional education event twice annually on campus. Students in the PA, Pharmacy, PT, OT, nursing, and athletic training programs take part in a Poverty Simulation. Participation allows students to gain insight into the complex challenges that individuals and families in poverty face on a daily basis. This past fall, an Opioid Awareness activity was introduced as a 2<sup>nd</sup> event.

#### **The Challenges:**

- PA students must be precepted primarily by a medical provider (PA, MD, DO). The growth of PA programs in NC and SC have increased the competition for clinical sites.
- The changes occurring in medicine, particularly primary care/outpatient services, have decreased the amount of time and ability of medical providers to participate in the education of PA students.
- The increasing request or requirement of a monetary stipends for PA clinical rotation sites is an additional concern.

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