

NURSING INFORMATICS

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Background

The University of Maryland School of Nursing pioneered the specialty of Nursing Informatics (NI) by creating the first NI master's program in the world in 1989. The NI specialty track remains the global market leader in the field as measured by the number of newly enrolled students annually and by national reputation. Nursing informatics is a combination of nursing science, information science/information management, and computer science. A Web-based Post Master's Certificate was first offered in the fall of 2001. Blended programs allow students to earn a Masters in Nursing Informatics and a certificate in Administration, Managed Care, or Health Policy.

Students

The Nursing Informatics specialty track attracts large numbers of students including those new to informatics and those practicing in informatics who are interested in bolstering their practice by a rigorous program of study. Currently there are approximately 100 students enrolled in the Master's program, about a dozen students working on the Post Master's certificate, and approximately six students working on blended tracks. Army, Navy, and Air Force nurses assigned to full time duty under instruction bring students from around the world into the program.

Employment

A small number of enrolled students are currently employed in the field of Nursing Informatics. Most graduates of the specialty track find employment in the field within six months of graduation. Nursing Informatics graduates are employed by hospital organizations, vendors, consulting organizations, and federal and state agencies. Positions informatics nurse specialists take include system administrator for clinical information systems, implementation trainer, research and development, junior member of a consulting team, and policy analyst. The demand for informatics nurse specialists will increase with the advent of HIPAA required security officers.

Future Projections

There are many indicators of steady and increasing demand for the graduates. The demand exists across a very wide range of settings including private corporations, healthcare organizations, and state and federal agencies.

The Nursing Informatics specialty track plans to offer the entire Master's program on-line, which will increase the accessibility of Informatics education for distance students. Students have requested a blend of Nursing Informatics with Education, which is now under development. In the future, an executive level Informatics track may be offered.

ADMINISTRATION

ADMINISTRATION

Background

The graduate program in Administration at the UMB School of Nursing is alive and well, and still going strong after more than 3 decades of consistent and continuous service. The program is ranked among the top five in administration by *US News and World Report*, which means that it is the highest nationally ranked program in the School of Nursing. This program currently has three tracks. One is the traditional focus in administration; another has an emphasis on managed care; and the third option is a dual degree effort (MS/MBA). These tracks were designed and developed to meet both healthcare trends and student needs. In addition, students with an extended time frame may pursue "combo"(combination) programs of study with another focus in the school. The most popular one of these to date is the Administration/Informatics offering.

Students

The majority of students in this specialty come from the Baltimore-Washington area. However, a number of the adult learners also come from surrounding regions such as Pennsylvania, Delaware, and northern Virginia. This program is especially fortunate to have a relatively large number of military officers attend each semester and these individuals come from across the nation. An international flavor has also been evident in recent years as students from Taiwan and South Korea have enrolled.

Employment

Graduates of the program (that is, all 13 tracks) are readily employed. Many assume middle-management positions in a variety of healthcare institutions. Others assume administrative (executive) positions in community hospitals, academic health centers, and government agencies. A small sampling of interesting and "famous" alumni include:
The first Navy Nurse Corps officer to reach Admiral rank;
The benefactress who gave the school a million \$ endowment;
A nurse entrepreneur who established a highly successful travel health firm;
First nurse to direct a Case Management program in an area hospital; and
A USPHS officer who directs the web site management project for CMS.

Future Projections

The need for this program - both today and tomorrow - is self evident given the turbulent times in society in general, and the healthcare arena particularly. Characteristics that have molded the program include excellent students, dedicated and experienced faculty, and a curriculum that is

realistic, relevant, and creative. The Administration offering is an "out of the box" example of leadership in action. In teaching-learning terminology this program is a stellar model of theory-into-practice. These latter comments are backed up by student evaluations, community agency leaders, and successful graduates.

Future plans include rigorous marketing efforts in coordination with the school's Office of Admissions and Student Affairs. This pursuit is already under way and should yield some interesting numbers.

NURSING HEALTH POLICY

NURSING HEALTH POLICY

Background

The nursing health policy specialty was established in 1980 as the nation's first program in nursing health policy. Dr. Jessie Scott played a key role in its establishment. The specialty prepares nurses to assume leadership roles in policy making and policy analysis in the public and private sectors. In addition to graduate nursing courses which emphasize the development of leadership and research skills, students are grounded in policy and political science and health economics. Students in the specialty take a subset of their courses at the University of Maryland Baltimore County (UMBC) campus in the Policy Science Program and receive an Advanced Certificate in Health Policy from the UMBC Policy Sciences Program in addition to the School of Nursing Certificate in Health Policy that is awarded to students at graduation. During their UMBC course work, students have opportunities to learn and network with a multidisciplinary mix of UMBC masters and doctoral level policy sciences students who have a range of experience from entry to senior level in policy related positions in public and private sector agencies. A real strength for the specialty is the close proximity of the School of Nursing to the state's capital in Annapolis, Maryland, the nation's capital in Washington DC, and the many government agencies and private sector policy shops, associations and lobbying groups key to shaping state and national health care policy with which our students get first hand knowledge via field trips and capstone internships.

Students

Students who enroll in the specialty are nurses who want to move beyond the individual patient care setting and have a broader area of influence, nurses who want to move away from a clinical role, and those who have an attraction to the political scene. Several students developed their interest in health policy when they took the core graduate course NURS 606 Systems in Health Care Delivery and switched from another specialty track into the health policy specialty track.

Employment

To date 115 students have graduated from the specialty. In the last ten years, twelve nurses became Presidential Management Interns, selected through national competition and almost 20 have continued in doctoral studies and moved into research areas.

Graduates have worked in senior policy positions within the U.S. Department of Health and Human Services, many with the Center for Medicare and Medicaid Services (CMS) in quality standards, health promotion and disease prevention, legislative liaison, fraud and abuse and provider credentialing, research and demonstration projects, to mention a few. One graduate was recently detailed to Secretary Thompson's staff. Another has worked in the CDC Washington office on smoking cessation programs and another has worked with the Administration on Aging and another on Women's Health Issues. Some have served in the legislative area within congressional offices and on health subcommittees. One will soon start to work with the health staff in Senator Kennedy's office. One graduate has been health staff for a Maryland State Senator, and another has

headed the office of legislative liaison within the State Department of Health and Mental Hygiene. One has headed a state nurses association and another is a Navy Commander and Deputy Assistant in the Navy's office for Homeland Security. Some have worked with private insurance companies in a technology assessment role and others have become lobbyists for health related special interest groups.

Future Projections

The need for nurses prepared in this specialty will only increase well beyond what we are able to produce. Nurses make a difference in policy outcomes when they are in policy related roles. They are in demand with employers who seek the added value that their in-depth insight and first-hand experience with grappling with the strengths and deficiencies of the health care delivery system brings to their policy expertise.

Since 1989, we have had a dozen nurses become Presidential Management Interns, selected through national competition and almost 20 continue in doctoral studies and move into research areas.

**FAMILY
NURSE PRACTITIONER**

FAMILY NURSE PRACTITIONER

Background and Plan of Study

The 46 credit FNP specialty track has been offered for the previous five academic years. The specialty is presented over a four semester sequence, taken full-time. Part time entry is possible, with completion time varying from 2 to 4 years, depending on entry point and progression of required coursework. A 36 credit post-master's certificate track is available to those who hold a previous master's degree in nursing. Specialty courses are offered in conjunction with master's core courses, with six sequential courses required. FNP theory and clinical courses are offered once a year and build upon one another, each having a theory and clinical component. Program content is offered in an integrated format, with all aspects of wellness and disease management presented from a lifespan perspective. Adult, pediatric, and women's health components are not separated into separate modules, and are incorporated into the sequential courses as they are encountered from a health promotion, acute disease management, chronic disease management, and integrated care perspective. Students have opportunities for clinical experiences in a variety of health care settings in rural and urban locations, with approximately 805 clinical hours required prior to graduation. Opportunities exist for students to complete specialty coursework at distance learning sites throughout Maryland.

Students

The FNP specialty track attracts nurses from various levels of practice. A well-rounded class is made up of recent graduates to those who have had several years of varied nursing practice. We have consistently graduated approximately 22 students for the previous three academic years.

Graduates of the FNP specialty are eligible for certification by the state of Maryland as well as national certification by the American Nurses Credentialing Center and the American Academy of Nurse Practitioners.

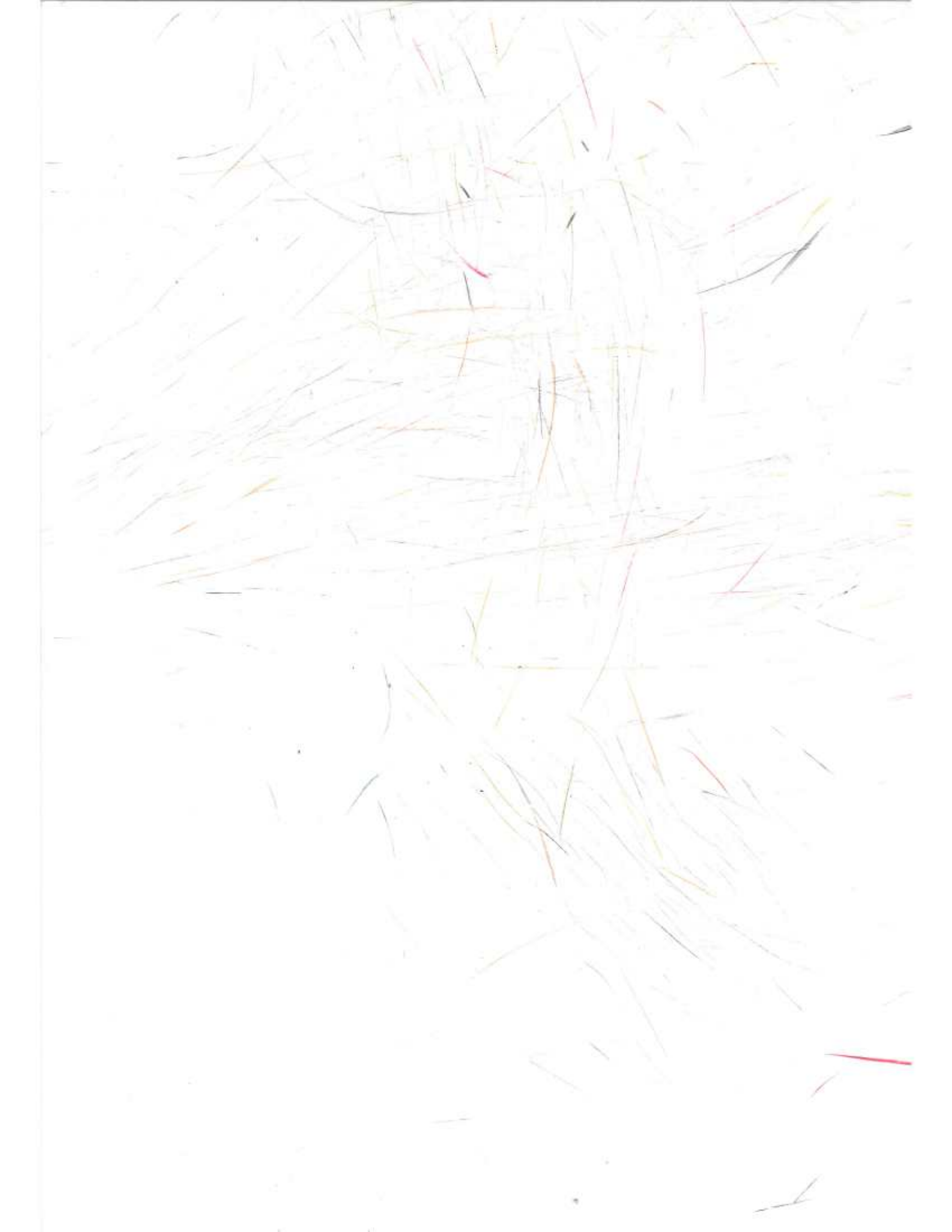
Employment

The program is consistently contacted by Family Practices, Community Clinics, and Specialists regarding recruitment of our recent and past graduates. The previous two graduating classes are well above 90% in terms of employment in the intended area of practice.

FNP specialty graduates are working in Maryland; the contiguous tri-state area; and for various government agencies, both military and non-military throughout the US and worldwide. Practice areas tend to be divided between private practices, HMO's, community clinics, and government health clinics. These data are supported by list-serve and student reported activity related to employment.

Future Projections

The future of the Family Nurse Practitioner specialty is quite good, as the healthcare market is open to the lifespan perspective of the specialty.



**WOMEN'S HEALTH
NURSE PRACTITIONER**

WOMEN'S HEALTH NURSE PRACTITIONER

Background

The Women's Health Nurse Practitioner (WHNP) was established approximately 15 years ago to prepare nurses to deliver primary care to adults with a focus on women's health throughout the life span. Emphases are on primary care, reproduction, obstetrics gynecology, and disease processes that impact women and their families' lives differently than men and professional issues. This educational program combines an in-depth knowledge of theory, pathophysiology, pharmacotherapeutics, research utilization, critical thinking and clinical decision-making skills along with 600 (minimum) hours of clinical practice experiences in a variety of clinical health care settings. An important feature of the program is to prepare nurses who will provide care reflective of the concepts of health promotion and maintenance, genetics, as well as diagnosis and management of health care problems. The WHNP program curriculum and faculty teaching in the WHNP's program meet the guidelines established by the Association of Women's Health, Obstetrics and Neonatal Nursing, National Association of Nurse Practitioners in Women's Health and the National Certification Corporation.

Students

The students entering the specialty have a wide-range of experiences with the majority having worked in an area of women's health. For many students, recognizing that women's health research is relatively limited in scope and limited in its application to practice have influenced their educational decision to pursue a career with a focus on women's health.

Employment

Graduates of our program should be able to make a significant impact on all aspects of the health care of women. Currently, they are working in about all clinical settings, including hospitals, community clinics, private practices and family planning clinics. The trend is moving toward more in-patient care and an increase in procedures and special testing performed by the WHNP.

Future Trends

The specialty will continue to evolve as more research is dedicated exclusively to women. With a continued increase in the cultural diversity of women, with more women seeking women providers, and with the increasing longevity of women, there will be a continued need for WHNP's.

**ADVANCED PRACTICE
PEDIATRIC NURSE
PRACTITIONER**

ADVANCED PRACTICE PEDIATRIC NURSE PRACTITIONER SPECIALTY

Background

Graduate education in maternal child nursing has long been a part of the University of Maryland School of Nursing. The Advanced Practice Pediatric Nurse Practitioner Program (APPNPP) at the University of Maryland School of Nursing, a blended Pediatric CNS/PNP program that leads to the master of science (MS) degree, has been in existence for at least ten years.

There are three emphasis areas in the APPNPP: 1) Primary Care; 2) Acute Care/Tertiary, and 3) School Based. All full and part time students, regardless of emphasis area, must successfully complete all master's core courses; all specialty support courses if applicable to the program of study; and the specialty clinical courses. Once these courses have been completed, the emphasis area selected by the student will determine the final course of study.

Students

Applicants to the Master of Science APPNPP must demonstrate evidence of academic potential and professional nursing skills and commitment to nursing practice, scholarship and leadership. The students' backgrounds vary from pediatric nursing experiences in an acute care or PICU setting to pediatric and adolescent outpatient health care. These students have clearly made the choice to work with children or adolescents and the variety of their backgrounds and clinical experiences provide richness to the curriculum. Most of the students in the APPNPP work part time and as they progress through the program gain new insights into how they want to shape their future.

Employment

Upon graduation, students find employment in primary care or acute care settings. They have had no problems finding jobs, especially in the acute care setting. In primary care, many of the graduates find part time employment that eventually translates into full time work. Follow up interviews with the graduates reveal employment satisfaction as well as increased appreciation for the curriculum. Examples of employment opportunities the students have taken advantage of include outpatient neurology, hematology/oncology and cardiology units at National Children's Medical Center in Washington DC, private practices in Virginia and Maryland, HMO's (Kaiser Permanente) and outpatient settings at Stanford and Duke Universities.

Future Projections

The PEW Health Professions Commission reports have consistently described the direction advanced practice nursing must take to meet the challenges of the next decade. The health care system will continue to shift its focus toward health and to emphasize a population based perspective. There will be limited resources and what resources are available will be used to address coordinated services. Expectations for provider

accountability will continue to increase as will the need for integrated preventive and health promoting interventions.

It is essential that APNs have the skills to manage complex patient situations by providing specialty care across practice settings, thereby facilitating the patient through the health care system. For example, neonatal nurse practitioners are broadening the scope of their specialization. In addition to meeting the needs of hospitalized neonates, these APNs are now following the families into the community setting. This is just one example of expanded styles of practice.

In order to prepare advanced practice nurses (APNs) for the changing situations they may encounter, the Commission stressed that nursing curricula provide APNs with a core set of skills that translate across institutions and settings. The Commission also identified essential or important abilities that the APN must possess to function safely and competently in the health care arena. These abilities include flexibility, critical thinking, interpersonal skills, leadership and an innate sense of self directed learning. **APPNPP** at the University of Maryland School of Nursing must provide students with the necessary tools to function in a variety of settings that range from newborn nursing to palliative care. APNs must possess the skills needed to follow an infant or child from the acute care setting into the community. The faculty believe the clinical nurse specialist role must be expanded to meet the needs of a diverse patient population. Advanced practice nurses must be able to advocate for the child in an increasingly complex political arena. Finally, the curriculum must include content that will allow produce advance practice nurses that embrace the academic environment. The faculty have also discussed the future of the school-based tract and how it might better fit in the program.

Faculty

The Advanced Practice Pediatric Nurse Practitioner Program (**APPNPP**) at the University of Maryland is planned and developed by the Advanced Practice Pediatric Nurse Practitioner faculty at the School of Nursing. All pediatric nurse practitioner faculty are certified by **ANCC** or **NCBPNP/N** and have a minimum of five years clinical experience. The faculty maintain clinical skills by practicing in a primary care setting. The amount of time varies from eight hours a week to thirty-two hours a week.

NURSE-MIDWIFERY

NURSE-MIDWIFERY

Background Information

The University of Maryland School of Nursing's Nurse-Midwifery Specialty:

- is the only nurse-midwifery education program in the state, which is 12th from the bottom in infant mortality though 4th from the top in per capita income (Maryland's tragic paradox);
- has twice competed for and been awarded federal government (Division of Nursing, HRSA) funding (total of approximately \$1.8 million) and has thus, been continuously federally supported since its inception in 1999 and will be supported through June 2005 on the current grant;
- is using federal funds to support a "cultural audit" of the curriculum to focus it more intensively on educating culturally competent providers to address the state's high infant mortality rate;
- will (in the next two years) be using the federal funds to make much of the curriculum available online to assist students in Maryland who cannot easily come to campus for classes;
- has the support and collaboration of many nurse-midwives around the state who have generously served as clinical preceptors for the program, including the nurse-midwifery services at the Baltimore Birth Center, the Center for Addiction in Pregnancy at Bayview, the University of Maryland Medical System, and Prince George's Hospital Center where 3 faculty have clinical privileges and provide precepting to midwifery students in the spring and fall semesters;
- takes 5 semesters to complete if studying full time;
- has graduated two cohorts of students, May 2001 (4) and 2002 (8), will have 6 more graduates in May 2003;
- has a 92% pass rate (11 of 12 graduates) to date on the national certification examination;
- received the maximum possible number of years of accreditation for a new program (5 years), with no recommendations, from the Division of Accreditation of the American College of Nurse-Midwives; and
- according to All Nursing Schools 2002 data, is the Master's Degree Program specialty most frequently visited on the School's website.

Background data about certified Nurse Midwives (CNMs):

- CNMs have practiced in the US since 1925.
- There are approximately 7,000 CNMs in the US now, and approximately 200 in Maryland; 99% of births attended by CNMs occur in hospitals and the remainder occur in freestanding birth centers or homes.
- The Standards for the Practice of Midwifery (2003) state that "Midwifery practice as conducted by certified nurse-midwives (CNMs) and certified midwives (CMs) is the independent management of women's health care, focusing particularly on pregnancy, childbirth, the post partum period, care of the newborn, and the family planning and gynecologic needs of women. The CNM and CM practice within a

health care system that provides for consultation, collaborative management, or referral, as indicated by the health status of the client.” Nurse-midwives seek to practice in a way that provides women with seamless access to medical care if complications arise, but CNMs are not “supervised” by physicians.

- The number of CNM attended births increased 125% from the year 1989 to 2000.
- The 297,902 births attended by CNMs in 2000 accounted for 7.3 percent of all births and 9.6 percent of spontaneous vaginal births.
- Nurse-midwifery education programs are accredited by the federally recognized Division of Accreditation (DOA) of the American College of Nurse-Midwives (ACNM) and there are 47 programs around the country.
- Graduates of ACNM DOA accredited programs are eligible to take the national certification examination given by the American College of Nurse-Midwives Certification Council (ACC).

Employment

The class of 2001 had 1 military student and 3 Maryland residents. The military graduate is practicing nurse-midwifery in the Army. One of the 3 Maryland residents works in an advanced practice role at Planned Parenthood of Prince George’s County. One is at the Baltimore City Health Department in an advanced practice role. The fourth is working as an agency nurse in Baltimore.

The 8 members of the class of 2002 received the results of their certification examinations approximately 6 ½ months ago, and all but 1 passed. To our knowledge, 4 are in Maryland and of those, 2 are looking for midwifery positions and 2 are pregnant and not looking intensively at this time. Of the 4 who have moved out of state, 1 person is practicing full scope midwifery in a rural clinic in South Carolina and 1 followed her husband to Indiana and is interviewing for midwifery jobs there. Two others have left the state, 1 to take an administrative position in nursing and 1 to work as a traveling nurse in order to “make some money and pay off my loans!”

To sum it up, to date, 2 graduates are working in full scope midwifery positions, 2 are working in an advanced practice clinical role, 1 is working as an administrator (a position we assume required a master’s degree), 3 are working as nurses and seriously job hunting, 4 are working as nurses and not seriously job hunting at this time.

The two graduated cohorts and the two cohorts now enrolled in the clinical sequence total 25 people, all female. Of those, 6, or 24%, are African American, 1 is Caribbean American of African descent, and the remainder are White. The most recent school-wide data shows that African American students were 17% of the student body of the Master’s Degree Program in 2001.

Market

Evidence of demand from potential students for the specialty: In the All Nursing School’s data for last year, the nurse-midwifery part of the SON’s web site was the most frequently visited Master’s Degree Program Specialty – over 9% of all specialty visits were to the midwifery part of the site. In the All Nursing School’s data for the 4 months

from November 2002 through February 2003, the Nurse-Midwifery Specialty received the most site visits, 17%, or 126 of 757. The next closest specialties were neonatal nurse practitioner, 14%, and women's health nurse practitioner, 12%. Inquiry data collected by the Office of Admissions and Student Affairs as of March 7, 2003 shows a similarly high level of interest in midwifery. The Office asks potential students which specialties they are interested in and what semester they might like to start school. A total of 98 people indicated that they were interested in midwifery with a start date in the 2002-2003 school year, and 100 people have inquired about midwifery with a start date in the 2003-2004 school year.

Future Trends

In addition to the 7 students in the cohort that will graduate in the Spring 2004, as of this writing in the end of March 2003, 10 students have told us they intend to be in the midwifery program in the Fall 2003 semester, and at least 7 of those will be in the clinical sequence. If the admissions process follows a trajectory similar to last year's, we will receive and accept several more applications between now and the fall, and some students will decide to go to other schools or to enroll part time at the SON, thus becoming part of a cohort that will graduate later than Spring 2005. In the beginning of the summer last year we expected 12 students to start the clinical courses in the Fall 2002 semester. By the time the semester arrived, however, other programs or the part time option had reduced the cohort to 7.

Nurse-midwifery as a profession believes that all women should have access to midwifery care and that there should be enough nurse-midwives for that to happen, much as it does in Great Britain, Australia, and Scandinavia, where midwifery care is more the norm than the exception in the care of pregnant women. There are in the U.S. now approximately 7,000 CNMs and 5,700 of them are in clinical practice. Approximately 400 new graduates take the national certification examination every year. Given that nurse-midwives conducted only 9.5% of vaginal births in 2000, it is clear that the supply, thus, does not even come close to being sufficient for every pregnant woman to have the option of nurse-midwifery care. According to a federal report of care in 17 states, *Prevalence of Selected Maternal Behaviors and Experiences, Pregnancy Risk Assessment Monitoring System (PRAMS), 1999*, "In 1999, 16.1%--29.9% of women reported receiving late or no entry into prenatal care...In 10 of 15 states where adequate data were available for black populations, late or no entry into prenatal care was significantly higher among black women than among white women (retrieved 3/21/03 from <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5102a1.htm>)." Given that infant mortality rates in this country far exceed those of other industrialized Western nations and that many women in this country do not receive adequate prenatal care, it is clear that the supply of nurse-midwives does not begin to meet the needs for health care for pregnant women in this country.

There is no good data about how many positions are open for nurse-midwives around the country. In 2002, the jobs available section of the web site of the ACNM received 224 postings. The 6 issues of the ACNM's print newsletter published in the same year had a total of 50 job advertisements. Anecdotal reports suggest that the job markets in metropolitan areas where nurse-midwifery is well established are tight, but that if a

midwife is willing to move for a job, she/he can find a position in full scope practice. Prior to the 1970s, most clinically practicing nurse-midwives worked in large public hospitals. Since the late 1970s, however, nurse-midwives have pioneered in establishing their own practices or in convincing physicians in private practice to expand their businesses to include midwives. Nurse-midwives have also pioneered the concept of the freestanding birth center and one of the largest education programs, the online Community Based Nurse-Midwifery Education Program (CNEP), specializes in educating students who are prepared to open their own businesses – be they birth centers or hospital-based practices. Nurse-midwifery students are encouraged throughout their educations to think not only of finding a job but also of creating jobs for themselves when they graduate.

**NEONATAL NURSE
PRACTITIONER**

NEONATAL NURSE PRACTITIONER

Background

The Neonatal Nurse Practitioner (NNP) specialty is offered through the Department of Child, Women's and Family Health Nursing. Established in 1993, this specialty prepares nurses to assume advanced practice roles in the care of high-risk infants and families. The program of study incorporates course work, laboratory, and clinical experience. The curriculum emphasizes clinical competence and the developmental and primary care needs of high-risk infants and families. A unique feature of the NNP program is the expansion of the role to include primary care, community, and substance abuse. In addition to an emphasis on advanced clinical practice expertise, three themes are developed within the NNP curriculum: the advanced practice/NNP role, research utilization, and developmental issues. Graduates of the NNP program are eligible for Maryland state certification as well as national certification by the National Certification Corporation.

Students

Students who apply for the NNP program are experienced neonatal intensive care nurses with 2-8 years of clinical experience. This program is designed to offer a post-masters certification and a MS degree to certified neonatal nurse practitioners in the community.

Employment and Future Trends

There are 600-700 job opportunities for neonatal nurse practitioners across the nation. This demand will increase with the changes in clinical hours for interns/residents in the coming year. Our graduates are offered employment 2-6 months prior to graduation. Hospitals and physician groups employ them. The future trends include the NNP working in follow-up and primary care clinics and in the community.