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TITLE: Partnering Research Involving Mentoring and Education (PRIME) in Prostate Cancer

PRINCIPAL INVESTIGATOR: Marva M. Price, Dr.PH, MPH, RN, FAAN

CONTRACTING ORGANIZATION: Duke University
Durham, NC 27710

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PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

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**Partnering Research Involving Mentoring and Education (PRIME) in Prostate Cancer**

**Authors:** Marva M. Price, Dr.PH, MPH, RN, FAAN

Email: marva.price@duke.edu

**Performing Organization:**
Duke University
Durham, NC 27710

**Sponsoring Agency:**
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

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**Abstract:**
Partnering Research Involving Mentoring and Education in Prostate Cancer (PRIME) is a partnership between two nursing schools, Duke University School of Nursing and North Carolina Central University (NCCU), an historically black college or university (HBCU). Our goal is to build a collaborative relationship between Duke University and NCCU that brings together students and faculty mentors to facilitate opportunities for underrepresented minority students to learn about prostate cancer. To accomplish this goal, we are capitalizing on the strengths of both universities to conduct a didactic and hands-on training program to expose undergraduate students to prostate cancer prevention, detection, and control research. The objectives of the PRIME program are to provide undergraduate nursing students with mentored experiential learning to (1) understand the burden of prostate cancer, particularly among African Americans; (2) develop a beginning level of competence in technology resources for information gathering and data management in prostate cancer research; (3) obtain introductory knowledge about the research process (4) gain hands-on experience in community-based prostate cancer control activities; and (5) experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a Research I environment. For summers 2005 and 2006, a total of 9 undergraduate nursing students have participated in this 10-week prostate cancer research mentored experience. The summer training was held at Duke University.

**Subject Terms:**
Prostate Cancer, Mentoring, Students, Minority, Research, Training
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Introduction

This is the second year progress report for Award W81XWH-05-1-0209. The report starts with an overview of the program, followed by a report of Statement of Work.

PRIME is a partnership between two nursing schools, Duke University School of Nursing and North Carolina Central University (NCCU), an historically black college or university (HBCU). Our goal is to build a collaborative relationship between Duke University and NCCU that brings together students and faculty mentors to facilitate opportunities for underrepresented minority students to learn about prostate cancer an it’s research. A need exists for nursing students in HBCU’s to be exposed to prostate cancer prevention, detection, and control research. The Institute of Medicine Report (IOM), The Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce, 2002, addressed the gaps and under representation of minorities in health professions. In particular, the report noted that a change in ethnic and racial demographics of the United States by the year 2020 means there could be an under representation of minorities in health professions, relative to the numbers of minorities in the population, affected by cancer and other chronic diseases.

NCCU is the nation’s first state-supported liberal arts college for African American students, and it is a historically black institution. Approximately eighty-nine percent of the student body identifies themselves as black or African American, 7% as white, non-hispanic, and 5% as other. Faculty identify themselves as 79% black, and 21% white or other. The 103-acre campus is located in Durham in the heart of the oldest section of the community. The NCCU Department of Nursing is 54 years old. More than 500 pre-nursing students in the university identify nursing as their major.

Specific Aims: The key to expanding the number of minority health care professionals and eliminating ethnic and racial health disparities related to cancer, including prostate cancer, lies in improving minority youth opportunities to find out about healthcare opportunities early in their education. Ultimately, the exposure will lead to more minorities entering the nursing profession and pursuing graduate programs in advanced practice and research that improve prostate cancer statistics. To accomplish this goal, we are capitalizing on the strengths of both universities to conduct a didactic and hands-on training program to expose undergraduate students to prostate cancer prevention, detection and control research.

Objectives: The objectives of the PRIME program are to provide students with mentored experiential learning to (1) understand the burden of prostate cancer, particularly among African Americans; (2) develop a beginning level of competence in technology resources for information gathering and data management in prostate cancer research; (3) obtain introductory knowledge about the research process (4) gain hands-on experience in community-based prostate cancer control activities; and (5) experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a Research I environment.
Study Design: We are following the successful model implemented in year one. For a second year, this intense summer program was based on concentrated one-to-one mentoring of pre-nursing students by mentors, with didactic, observational, and experiential training in prostate cancer education and research. A key feature of the PRIME program is provision of student mentoring for a beginning understanding of prostate cancer research by learning basic research skills. Secondly, career development and role modeling for academic success are strong features of this program.

In the spring of each year, this summer mentorship opportunity is advertised to students who have identified nursing as their intended major. Interested students make application. Eight students were selected based on the best application essay indicating why the applicant is interested in pursuing mentorship in prostate cancer, and their grade point average of at least 3.0, and no tuition and fee support for college expenses from scholarship sources during the previous or upcoming school year. Applicants were screened by the designated faculty at NCCU department of nursing. Face-to-face interviews were conducted by the program principal investigator. Interviews were held at NCCU and four students were selected with four alternates. Alternates were selected should chosen students decline the mentorship opportunity.

Body

In our second program year, four students and four alternates were selected for the PRIME program from a pool of 10 applicants (three males, 7 females). Three students selected were completing their sophomore year, and one student was completing her freshman year. Three male and one female student were selected; two male students later declined the offer. One declined due to a full-time work commitment, and the other male declined due to a competing internship opportunity. Two female alternates were selected. Scientific faculty mentors with prostate cancer related research were recruited from among Duke University Medical Center’s Research 1 environment. Three faculty volunteered as mentors and were matched to students. One of the faculty provided mentorship to two students, and two other faculty mentored one student each.

Three Duke University Medical Center faculty served as mentors:
- Cathrine Hoyo, PhD, Epidemiologist, Department of Family and Community Medicine
  One student
- Lisa PhD, Clinical Psychologist, Psychiatry and Behavioral Sciences
  One student
- Leon Sun, MD, Urologist, Department of Surgery, Division of Urology
  Two students

All mentoring faculty are members of the Duke University Medical Center Cancer Prevention and Control Program.

During the 10 weeks, the following activities occurred:
Duke University identification badges and parking permits secured; tour of the Duke University campus, medical center, and nursing school.

Tour of the medical center library.

Completion of two Safety, three HIPPA and three Institutional Review Board (IRB) tutorial education modules prior to access to mentors’ databases. *Students were required to successfully complete three IRB tutorial modules and the post-test for each. Two modules were required:
- Protecting Research Subjects
- What Counts As Research with Human Subjects

A third module could be selected from among IRB tutorials including:
- Informed Consent for Research
- Protecting the Confidentiality and Privacy of Research Participants
- Research in Emergency Settings
- Social Science Research in a Medical Setting
- Using Databases in Research

Library hands-on session on conducting searches of the scientific journal databases. Students learned to conduct searches related to their selected project. The projects were based on the work of their mentors.

Instruction and practice sessions on how to read and understand research literature.

Weekly two hour seminars for instruction on writing a research abstract in preparatory for writing an abstract for their own work. With guidance from their mentors, students selected a research project based on the work of their mentors. The seminar sessions also were used for trouble shooting professionalism issues such as any tardiness, requests for leaving before the appointed time, and difficulties understanding the work load.

Hands-on instruction in computer programs: Excel, PowerPoint, and SPSS.

Direct mentorship by the faculty mentor over the 10 weeks. This included data entry and journal searches. The students shadowed for two days each with one urologist in a urology clinic observing discussions with patients during and after diagnosis for prostate cancer and other urologic disorders, and for follow-up treatment.

Students attended one Duke University Medical Center Institutional Review Board (IRB) meeting to observe a team of medical center IRB members present and evaluate new and renewal study proposals.
Final day PowerPoint presentation on each student’s project. These were presented to an assembly of mentors, faculty, family members, and friends, followed by a reception in celebration of the students’ achievements during the program. Certificates of participation were presented to each of the summer interns.

At the end of the program, a paper-pencil evaluation was completed by each student; a face-to-face interview was conducted with each mentor. Feedback from these two evaluations was used in preparation for the subsequent summer (2007).

September 23 and 24, 2006, gained hands-on experience in community-based prostate cancer control activities in Durham, NC. The students assisted with the registration, clinic flow, and consenting process in two day-long prostate cancer screening clinics.

Two of the four students attended the one-day 28th Annual Minority Health Conference sponsored by the University of North Carolina School of Public Health, Minority Health Caucus, Chapel Hill, N.C., February 23, 2007.

**Statement of Work**

The Statement of Work has been refined with details of the work to be accomplished for the grantee (Duke University School of Nursing or Duke) and the subcontracting party (North Carolina Central University or NCCU).

**STATEMENT OF WORK**

Grant Awarded
Years 1, 2, 3

Task 1: **NCCU**: Planned for marketing PRIME program to NCCU pre-nursing students
  Months 1-3 (January, February, March of each year)
  a. Developed plan for recruiting and contacting students.
  b. Two graduate student assistants selected to work with program (May through July/August).
  c. Designed applicant qualifications, the application, and interview process.
  d. Marketed and recruited students from among NCCU students who identify nursing as their intended major.
  e. Minimal qualifications: minority student, student availability for summer program, quality of the program interest essay, and 3.0 minimal Grade Point Average (GPA).
  f. Scheduled interviews at the NCCU Department of Nursing after NCCU prescreening. Interviews were conducted by Duke.
  g. Planned reception for selected students, their faculty, and family members at NCCU Department of Nursing.
h. Plan and documented with Dr. Lorna Harris, Dean, Department of Nursing at NCCU mentoring contact schedule for fall and spring semesters which was maintained with students at least once each semester.

Task 2: Months 4-5 (April, May)
   a. **NCCU**: Reviewed ongoing NCCU mentoring schedule (April).
   b. **NCCU**: Validated GPAs for applicants. Monitored end of semester GPA for previous year’s program students.
   c. **DUKE**: Recruited mentors and refined schedule for 10-week summer program.
   d. **DUKE**: Conducted 10-week summer program (May through July).
   e. **NCCU**: Prepared for students monthly stipends.

   a. Task 3: Months 6-9 (June, July, August, September)
   b. **DUKE**: Students worked with mentors.
   c. **DUKE**: Ongoing meetings with research faculty and graduate student assistants.
   d. **DUKE**: Engaged in workshops and seminars.
   e. **DUKE**: Students prepared abstracts based on their summer projects. End of program presentations session conducted. Final day presentations attended by mentors, faculty, family, and other guests.
   f. **DUKE**: Conducted evaluation and wrap-up, and student evaluations.
   g. **DUKE**: Face-to-face mentor evaluations were obtained.
   h. **DUKE**: Program administrative tasks.
   i. Obtained tuition amount and paid towards fall tuition to NCCU for current year students. Tuition paid for instate rate only – subject to that allowable by original budget and annual budget revisions.

Task 4: **NCCU**: (September) Coordinated student volunteer activity for two-day September prostate cancer education month free prostate cancer screening clinic at Lincoln Community Health Center and Duke University Medical Center; on third Saturday and Sunday annually.

Task 5: Months 10-12 (October, November, December)
   a. **NCCU**: Checked GPA at end of fall semester-need to maintain 3.0 overall GPA throughout project, if student falls behind, one time January stipend bonus will not be awarded. Two of four students received the stipend bonus. Two students withdrew from school during the fall semester.
   b. **NCCU**: Facilitated continued regular mentorship for two continuing students.

Task 6: **DUKE**: Overall program evaluation and submission to DOD Month 12 (delayed until August 2007).

Task 7: **NCCU**: Two students prepared for attendance at the 28th Minority Health Conference, University of North Carolina, Chapel Hill.

Task 8: Final project evaluation in Year 3.
As in Year 1, Year 2 found undergraduate students are less likely to have been exposed to information about prostate cancer, its incidence and mortality. Through this one-one mentorship, this training program provided background information and research exposure on the morbidity and mortality related to prostate cancer, diagnosis and treatment including surgical intervention, and the ethnic, racial disparity for the disease. Students’ grasp of a sophisticated understanding of a complex disease was accomplished so that during and by the end of the summer, they were able to communicate at a high level with their mentors and other scientists with whom they had the opportunity to discuss the disease and their mentored work.

**Key Research Accomplishments:**

The following abstracts were developed and the research presented at the School of Nursing:

- Summer Intern Student Shunyoung Smith, rising junior, under the mentorship of Cathrine Hoyo, Ph.D., Epidemiologist, Duke University Medical Center, Department of Family and Community Medicine:
  “Association Between Inflammatory Markers and Prostate Carcinogenesis: A Meta-Analytic Review”

- Summer Intern Student Ashton Fearrington, rising sophomore, under the mentorship of Lisa C. Campbell, Ph.D., Assistant Professor, Duke University Medical Center, Psychiatry and Behavioral Sciences:
  “Comorbid Medical Conditions and Post-Treatment Quality of Life in African American Prostate Cancer Survivors”

- Summer Intern Student Kenneth Joseph, rising junior, under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology:
  “The Differences between African-Americans and Non-African Americans With Regard to Prostate Specific Antigen From The PSA Era to Present”

- Summer Intern Student Alisha Childs, rising junior, under the mentorship of Leon Sun, MD, Urologist, Department of Surgery, Division of Urology
  “The Effects of Age and Race on Gleason Score and Tumor Stage”

**Reportable Outcomes:**

Successful completion of the summer program for four students; four were enrolled back in their home campuses for the fall semester, and two students subsequently withdrew from school due to family obligations. The two continuing students maintained a 3.0 GPA and are continuing in the nursing major with high interest in patient care and research.

**Conclusions:**

**Program Evaluation:**
Year 2, like year 1 of this program, was highly successful. Four African-American students from a local HBCU had a beginning level of learning experience in prostate cancer research. Students evaluation feedback indicated that they had been well-exposed to health care research, an area they had not been involved in before. They felt that they had learned a great deal from their mentors. Further, parts of their mentored experience will be applicable in improving their understanding of nursing research in their academic programs and future nursing careers.

These students were engaged in a concentrated 10-week mentored summer research program. All of the students were at similar levels of unexposure to cancer research and all had the potential and the opportunity to gain a great deal from the internship. Most of the experiences and activities were completely new for the participants. They had no research training in a particular area; nor had they been exposed to information on the prostate. Thus, this program was able to provide a learning experience and address student needs that may not be addressed elsewhere or at any other time in their academic career. Furthermore, we were very successful in meeting the proposed goals of the program and in some areas even reaching beyond our predetermined expectations, particularly with the amount of materials on the prostate and research that the students were able to learn and understand. During their final presentations students addressed a wide audience of Duke and NCCU faculty and community members, engaging in a discussion of the ways in which prostate cancer can be controlled through proper screening and early detection, and research methodology.

The goals for this program were to help student learn to:

(1) Understand the burden of prostate cancer, particularly among African Americans

Students presented their research projects on the final day of the internship. All of the presentations adequately highlighted the importance of prostate cancer research by addressing the affect this type of cancer has on the population and the higher risk of prostate cancer among African-Americans.

(2) Develop a beginning level of competence in technological resources for information gathering and data management in prostate cancer research, and writing about and presenting the research.

a.) The students performed their own literature searches for background information with which to form their hypotheses. One student conducted a thorough meta-analysis on inflammatory markers associated with obesity and prostate carcinogenesis. One student learned to use a database to study quality of life among prostate cancer survivors. Two students were required to code positive surgical margin data and scan and continue to build the database that store these critical outcomes. For their final presentations, all of the students learned how and wrote up a full abstract. Basics of manipulating the SPSS data analysis program were taught.
One student conducted a literature review as her primary project. In order to give her experience with data analysis, a part of her learning involved computational meta-analytic (CMA) software to analyze and interpret data from the review literature. CMA use affect size from primary studies to produce one effect size across all of the studies.

Students were instructed in the use of PowerPoint as a tool for presenting their research. As a final project, all students completed PowerPoint presentations.

We can be confident that all of the students left this program with at least a beginning level of competence in all of our goal areas. Although the students still have a large learning curve in developing the skills learned throughout the internship, they were most likely ahead of their peers going into the next year of the undergraduate nursing program.

(3) Acquire an introduction to the research process through a mentored independent research project addressing some aspect of prostate cancer control, work with the Duke mentor’s prostate cancer research, and observations and interactions with research faculty at Duke University Medical Center.

All of the students worked closely with a mentor who was involved in prostate cancer research. Each student left the internship with a very good understanding of what their mentors research was about and what purpose it served. As in the previous summer’s students, arranging weekly observation and interaction with research and clinical faculty other than their immediate mentors was somewhat difficult. However, in addition to their primary mentors, students were advised by two graduate student assistants from the Duke medical center environment. On-site shadowing with a urologic surgeon in a clinical setting occurred with Dr. Cary Roberston who had been a mentor in this project in the previous summer. In addition, students meet with the nursing team in the Urology clinic.

Students observed an institutional review board meeting to learn about clinical trials and research management in a university setting. This meeting was of particular interest, as their advisors were conducting primary research that had been reviewed by the IRB committee. Attending the meeting allowed students to gain knowledge concerning the extensive preparation that goes into conducting clinical trials, particularly with sensitive research populations such as African American males.

(4) September 23 and 24, 2006, gain hands-on experience in community-based prostate cancer control activities

The students participated in the free prostate cancer screening program held at the Lincoln Community Center and Duke University Medical Center, both in Durham, North Carolina. Approximately 500 men participated in the annual free screening clinics.
(5) Experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a major university environment

Students were given the opportunity to build networks with their mentors and research staff in their immediate environment. However, greater exposure to different research and clinical faculty will help them build better networks and find other researchers with whom they would want to keep in close contact. The PRIME program has the potential to help student form long standing mentorship relationships. Another barrier to the building of networks was the motivation of the students to form these types of relationships. The need for a professional network was not a salient value for these students who were only going into their second or third year of undergraduate education.

Overall perspectives on the students’ ability to make the best use of the learning and research environment:

Alisha Childs. Alisha was a rising junior at NCCU, who entered the program when another student dropped out of the selection process. She showed immense motivation before her acceptance, where she attended a reception for PRIME at NCCU, and spoke with Dr. Price, PI, about her future interest in the program. Although there were no spots remaining for students at that time, Alisha sought the opportunity to let her strong interest in the program be known which demonstrated that she was an enthusiastic student.

Alisha was the perfect example of the type of student that PRIME seeks. She came equipped with a high level of motivation, a willingness to learn, and an eager passion as reported by her mentor, Dr. Sun. Where Alisha lacked in research skills, she compensated in regular late night meetings with her mentor and lab group, in attempt to understand a rather complex data set. For a rising junior, her eventual level of understanding for the data was extensive. In the end, Alisha’s final project was well accomplished but also demonstrated that she needed more assistance than she had realized. Although eager, Alisha did not know when to ask her mentor for help in understanding more complex issues encountered in the research.

Kenneth Joseph. Ken, a rising junior, also worked with Dr. Sun. He was one of two second degree students who decided that he was interested in a career in nursing later in life. Ken was also willing and motivated, as he, too, spent extensive time with Dr. Sun after hours. Ken was another model student. During weekly seminars and while in clinic rotation, Ken constantly asked questions. He demonstrated a consistent level of interest and enthusiasm throughout the program. Unfortunately, Ken did not discuss family difficulties with his home campus faculty mentor and nursing dean once the fall semester began, and withdrew from school early in the fall semester.

Ashton Fearrington. Ashton was also a rising sophomore at NCCU. She emerged as both motivated and productive, according to her mentor, Dr. Lisa Campbell. From the beginning, Ashton engaged in data entry for her lab, familiarizing herself with the measures used in Dr. Campbell’s qualitative research. Due to her first hand experience with the data, Ashton was able to conduct extensive data analysis with the help of her mentor. Her assignments were on time and up to par with the program expectations.
The relationship between Ashton and Dr. Campbell is one in which PRIME should seek to attain for all students and mentors. Dr. Campbell was thoroughly involved and helped Ashton to produce a high level of work. Ashton was the only student to fully take advantage of SPSS data analysis, as she was able to run ANCOVA’s and interpret the data. As a result of the extensive mentorship that Ashton received, she needed the least help for her exceptional final presentation. Of all the students, Ashton was extremely prepared and proved the most prepared for the final presentation.

Shunyoung Smith. Shunyoung was one of the more experienced students with a beginning knowledge of the basics of research, having received her B.A. in Sociology from the University of North Carolina, Chapel Hill. As a second degree student, she was equipped with a level of academic maturity that encouraged the other students. As such, Shunyoung was encouraged to conduct a meta-analytic review of the research in her mentor’s field, which consisted of compiling the statistical information from each review. Admittedly, this review was extremely labor intensive for the 10 weeks. The final project and presentation were impressive. Shunyoung was very proud of her presentation. A challenging project, a meta-analysis is a time consuming process that requires more than 8-weeks to fully comprehend. Shunyoung felt as though she had not learned as much about the process of meta-analyzing the review, however, she was thoroughly informed about the causal mechanisms that lead to prostate cancer. This student, unknowing to the principal investigator or her home university, also had family burdens and likewise dropped out of nursing school in the fall semester.

Unexpected Difficulties Encountered:
Students do not expect the intensity of the program and their mentor’s on task research demands. They are accustomed to the academic year where there are hours of breaks between classes. Giving full attention for a full day in the academic environment in a research intensive institution was a behavior that had to be understood and adjusted to by all four students.

More observation experiences and interaction with other medical center researchers will be planned and strived for in the subsequent summer.

Personal and family issues interfere with the older student adult learner. These students are motivated to return to college to advance their degrees to a more compatible career, but encounter family issues that slow or interfere with the academic process.

So What
We believe that we have an excellent undergraduate research training model. The results of the program evaluation will be used to improve planning and conduct of our program in Year 3.
References


Ransohoff, D.F., McNaughton Collins, M., Fowler, F.J. (2002). Why is prostate cancer screening so common when the evidence is so uncertain? A system without negative feedback. American Journal of Medicine, 113 (8), 691-3.


Appendices

- PI Curriculum Vitae
- Meeting Abstracts
- Study Personnel
- PI Contact Information
DUKE UNIVERSITY MEDICAL CENTER  
CURRICULUM VITAE  

Date Prepared: August 2007  

Name (complete with degrees): Marva L. Mizell Price, DrPH, MPH, FNP, FAAN  

Primary academic appointment: School of Nursing  

Primary academic department: School of Nursing  

Secondary appointment (if any) – (department):  

Present academic rank and title (if any): Assistant Professor  

Nursing Licensure: North Carolina Registered Nurse  

Original Date of License (Month/Day/Year): August 1972  

Renewed November 2007  

Specialty certification(s) and dates (Month/Day/Year):  
St. Margaret’s Hospital, Boston: Natural Family Planning Instructor, 1988.  

Re-credentialed by Duke University Medical Center Credentialing Service, June 28, 2006  

Social Security number: xxx-xx-2343  

Date of birth: 11-25 Place: Columbia, N.C. USA  

Citizen of: USA  

Visa status (if applicable): N/A
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<th><strong>Education</strong></th>
<th><strong>Institution</strong></th>
<th><strong>Date (Year)</strong></th>
<th><strong>Degree</strong></th>
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<td>College</td>
<td>School of Nursing N.C. Agricultural &amp; Technical State University Greensboro, NC</td>
<td>1972</td>
<td>B.S.N.</td>
</tr>
<tr>
<td>Graduate or Professional School</td>
<td>School of Public Health, Department of Maternal and Child Health, University of North Carolina, Chapel Hill, NC</td>
<td>1974</td>
<td>Master of Public Health (M.P.H.) in Maternal Child Health</td>
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<tr>
<td></td>
<td>School of Nursing University of North Carolina, Chapel Hill, NC</td>
<td>1974</td>
<td>Family Nurse Practitioner</td>
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<tr>
<td></td>
<td>School of Nursing University of Washington, Seattle, Child Development and Mental Retardation Center</td>
<td>1979</td>
<td>Post-Masters in Developmental Pediatrics</td>
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<td></td>
<td>School of Public Health, Department of Maternal and Child Health and Program in Public Health Leadership, University of North Carolina, Chapel Hill, NC</td>
<td>1997</td>
<td>Doctor of Public Health (Dr.P.H). in Maternal and Child Health and Public Health Leadership</td>
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<td></td>
<td></td>
<td>1995-1997</td>
<td>Predoctoral Fellow, Cancer Prevention and Detection: University of North Carolina Lineberger Comprehensive Cancer Center, Chapel Hill</td>
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Scholarly Societies/Awards:

1973-present Invited, Delta Omega Honor Society in Public Health
1974-present Invited and Inducted, Sigma Theta Tau, Alpha Alpha Chapter, International Honor Society in Nursing; Junior and Senior Counselor, 1978-1980
1993 Great 100 Award For Nursing Excellence In North Carolina for Outstanding Contributions to the Profession of Nursing
1995-1996 Albert Schweitzer Fellowship
1995-1997 Lineberger Comprehensive Cancer Center, University of North Carolina, Pre-Doctoral Fellowship
1995 American Nurses Association Ethnic Minority Fellowship (accepted as unfunded award)
1996-present Inducted, Charter Member, Sigma Theta Tau, Mu Tau Chapter, International Honor Society in Nursing
1996 Alumni Student Award, UNC School of Public Health, awarded at the UNC School of Public Health Annual Alumni Conference
1997 Community Health Nurse of the Year, North Carolina Nurses Association
2002-present Invited and Inducted, Fellow, American Academy of Nursing
Professional training and academic career:

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<tr>
<td>Annie Penn Memorial Hospital, Reidsville, NC</td>
<td>Registered Nurse</td>
<td>1972-1974</td>
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<tr>
<td>Rotated on all services in a 120 bed community hospital (Medical/surgical,</td>
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<td>ER, Delivery Room, Pediatrics, Recovery Room)</td>
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<tr>
<td><strong>Post-Master’s:</strong></td>
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<td>University of North Carolina, School of Public Health, Chapel Hill, NC</td>
<td>Family Nurse Practitioner</td>
<td>1974-1976</td>
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<td>University of North Carolina Employees Health Services, Chapel Hill, NC</td>
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<td>Family Nurse Practitioner</td>
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<td>University of North Carolina, Chapel Hill, NC</td>
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<td>Division for Disorders of Development and Learning (currently Center for</td>
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<td>Development and Learning)</td>
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<tr>
<td>Department of Health and Human Services, Winston Salem &amp; Raleigh, NC</td>
<td>Health, Division of Maternal Child Health</td>
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<tr>
<td>Duke University Medical Center, Durham, NC</td>
<td>Family Nurse Practitioner and Program Coordinator, Women’s Cancer Screening</td>
<td>1991-1994</td>
</tr>
<tr>
<td>Department of Obstetrics and Gynecology, Division of GYN Oncology</td>
<td>Program &amp; Cervical Dysplasia Private Clinic</td>
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<tr>
<td>Chatham County Health Department, Pittsboro, NC</td>
<td>Interim Health Director</td>
<td>1992</td>
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<tr>
<td>Kaiser Permanente</td>
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<tr>
<td>Durham-Chapel Hill Office, NC</td>
<td>Family Nurse Practitioner</td>
<td>1994</td>
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<td>Randolph County Health Department, Family Planning Clinic, Asheboro, NC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Doctorate:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duke University School of Nursing, Durham, NC</td>
<td>Clinical Assistant Professor</td>
<td>1996-2001</td>
</tr>
<tr>
<td>Family Nurse Practitioner Program</td>
<td></td>
<td></td>
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<tr>
<td>Program Director, Family Nurse Practitioner Program</td>
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</table>
Publications:

1. **Refereed journals:**

2. **Non-refereed publications:**

3. **Chapters in books:**


4. **Books:** N/A

5. **Non-authored publications (contributions noted in author’s acknowledgements):**

6. **Other Materials:**
   a. **Published scientific reviews (for mass distribution):**
      
      **Book Reviews:**

   b. **Selected Abstracts:**


16. **Price, M.M.** (1999, April). Enhancing nurse educators’ knowledge base to teach their students cancer prevention and early detection in African Americans; and Using the Albert Schweitzer fellowship program to foster cross-cultural experiences for nurse practitioner students. Symposium conducted at the annual meeting of the National Organization of Nurse Practitioner Faculties (NONPF), San Francisco.


22. **Price, M.M.** (2000, August). “Follow-up of Men who Participate in a Free Community Day Prostate Cancer Screening Clinic” and Generational Influences on Cervical Cancer Screening”, Papers presented at the National Black Nurses Convention, Washington, DC


**Community Presentations (Non-Abstract):**


**Continuing Education Courses:**
Faculty, Oncology Nursing Society Three-Day National Institutes on Cancer Prevention and Detection in African Americans, Funded by the National Institutes of Health National Cancer Institute, “Cervical Cancer”, 30-40 participants per Institute

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Organizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Atlanta, February 2005</td>
<td>*Chicago, January 2003</td>
<td>Union of International Cancer Congress</td>
</tr>
<tr>
<td>*Miami, February 2004</td>
<td>*Miami, June 2002</td>
<td>Union of International Cancer Congress</td>
</tr>
<tr>
<td></td>
<td>*Atlanta, September 2000</td>
<td>Union of International Cancer Congress</td>
</tr>
<tr>
<td>*Milwaukee, September 1999</td>
<td>*Miami, March 2002</td>
<td>American Public Health Association</td>
</tr>
<tr>
<td>**Philadelphia, December 1999</td>
<td>*Miami, August 2001</td>
<td>American Public Health Association</td>
</tr>
<tr>
<td>**Chicago, August 1996</td>
<td>**Miami, August 1998</td>
<td>American Public Health Association</td>
</tr>
<tr>
<td>**Seattle, October 1993</td>
<td>**Miami, August 1999</td>
<td>American Public Health Association</td>
</tr>
<tr>
<td>**Lexington, KY April 1993</td>
<td>**Atlanta, October 1994</td>
<td>American Public Health Association</td>
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</table>

**Organizations and participation (regional and local):**

<table>
<thead>
<tr>
<th>Dates</th>
<th>Office held and/or Committee Assignment</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-2003</td>
<td>*International: Member</td>
<td>Union of International Cancer Congress</td>
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<tr>
<td>2002-2004</td>
<td>Member</td>
<td>International Society of Nurses in Cancer Care (ISNCC)</td>
</tr>
<tr>
<td>1974-present</td>
<td>National: Member</td>
<td>American Public Health Association</td>
</tr>
<tr>
<td>1974-2002</td>
<td>Member</td>
<td>American Nurses Association</td>
</tr>
<tr>
<td>1978-2004</td>
<td>Member</td>
<td>National Black Nurses Association (local chapter: Central Carolina Black Nurses Association)</td>
</tr>
<tr>
<td>1998-2004</td>
<td>Member</td>
<td>American Social Health Association, RTP, NC, National Cervical Cancer and Human Papilloma Virus Project</td>
</tr>
<tr>
<td>1995-present</td>
<td>Scientific Advisory Board Member</td>
<td>Oncology Nursing Society</td>
</tr>
<tr>
<td>January-August 2000</td>
<td>Member</td>
<td>ONS National Challenge Conference, Conference held in Atlanta, September 14-17, 2000</td>
</tr>
<tr>
<td>January – April</td>
<td>Committee Member for participant follow up</td>
<td>Invitational for Best 100 Oncology Nurse</td>
</tr>
<tr>
<td>Dates</td>
<td>Office held and/or Committee Assignment</td>
<td>Organization</td>
</tr>
<tr>
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<tr>
<td>2002</td>
<td>and to plan a reunion luncheon and poster session</td>
<td>Community Outreach Cancer Prevention and Early Detection Programs, held in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Washington, D.C., April 20, 2002</td>
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<tr>
<td>1997-2004</td>
<td>Member</td>
<td>National Association of Nurse Practitioner Faculties (NONPF).</td>
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<tr>
<td></td>
<td>2003-2006 Member, Clinical Doctorate Task Force, National Organization of Nurse Practitioner Faculties (NONPF)</td>
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<tr>
<td>2006-</td>
<td>Chair, subcommittee on Faculty Qualifications, Faculty Development, and Student Admissions Criteria</td>
<td></td>
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<tr>
<td>March 2005</td>
<td>Member, National The Susan G. Komen Breast Cancer Foundation African American Advisory Council</td>
<td>Meetings 2 x year</td>
</tr>
<tr>
<td>1994; serving</td>
<td>Member, the Public Health Commission writes the rules for all legislation passed by the North Carolina General Assembly including environmental and personal health legislation, immunization laws, restaurant and lodging grading standards, childcare facility, food establishment grading standards, HIV, smallpox, other communicable disease control.</td>
<td>Governor’s 12 member Commission for Health Service (Public Health Commission), Raleigh. Quarterly meetings.</td>
</tr>
<tr>
<td>1995-1997</td>
<td>Chair, Evaluation and improvement of cancer screening services (clinical, laboratory, and radiological) for women in private and public sector clinics</td>
<td>North Carolina Health and Human Services, Department of Health, Breast and Cervical Cancer Assurance Committee</td>
</tr>
<tr>
<td>2000-present</td>
<td>Member, Board of Advisors and Fellowship selection subcommittee. The Foundation provides paid fellowships for community service learning projects conducted by medical, dental, nursing, veterinarian, and law graduate and professional students across North Carolina universities with major medical centers.</td>
<td>The Albert Schweitzer Foundation; fellow interview and selection annually in March; fellowship mentorship, and guidance in seminar development; meetings once a year, Duke School of Nursing student mentoring.</td>
</tr>
<tr>
<td>2001-2002</td>
<td>Member</td>
<td>Old North State Medical Society, Raleigh-Durham Chapter</td>
</tr>
<tr>
<td>1975-present</td>
<td>Member;</td>
<td>North Carolina Nurses Association (formerly District Eleven)</td>
</tr>
<tr>
<td>1985-1987</td>
<td>Secretary for Triangle Region;</td>
<td>North Carolina Nurses Association</td>
</tr>
<tr>
<td>2001-2003</td>
<td>Commission on Standards and Practice</td>
<td>North Carolina Nurses Association</td>
</tr>
<tr>
<td>January 2000</td>
<td>Participant, North Carolina Nurses Association Leadership Day</td>
<td>North Carolina Nurses Association</td>
</tr>
<tr>
<td>January 2000-2001</td>
<td>Participant, Awards Selection Committee for Outstanding Nursing Leadership and Service</td>
<td>North Carolina Nurses Association</td>
</tr>
<tr>
<td>2001-2003</td>
<td>Commission on Standards and Practice</td>
<td>North Carolina Nurses Association</td>
</tr>
<tr>
<td>February 2003</td>
<td>Member, Advisory Board</td>
<td>North Carolina Nurses Association</td>
</tr>
<tr>
<td>1986-1987</td>
<td>Member, Board of Directors</td>
<td>University of North Carolina School of Public Health, Department of Maternal and Child Health, participated in review of candidates for department chair; annual board meetings Piedmont Health Care, Inc. Federally funded primary care centers in three rural North Carolina counties</td>
</tr>
<tr>
<td>1993-1994</td>
<td>Chair</td>
<td>Chatham County Board of Health</td>
</tr>
<tr>
<td>2001-2004</td>
<td>Member</td>
<td></td>
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</tbody>
</table>
**Dates**  
2001-2004, County Commissioners Appointment  
2004

**Office held and/or Committee Assignment**  
Member, official certifier for Board proceedings  
Executive Board and Health Committee Member

**Organization**  
Orange-Chatham-Person Developmental Disabilities and Mental Health Authority (Mental Health Board), monthly meetings  
Carolina Meadows Retirement Community, a 700 resident continuing care retirement community, meetings four times a year

**External Support Grant funding:**

<table>
<thead>
<tr>
<th>PI</th>
<th>% Effort</th>
<th>Purpose</th>
<th>Amount</th>
<th>Duration</th>
</tr>
</thead>
</table>
| PRESENT  
Principal Investigator, U.S. Army Department of Defense | 15% | Collaboration Around Research and Education (CARE) in Prostate Cancer with Bennett College, Greensboro, N.C. to provide beginning prostate cancer education to 12 undergraduate science (biology) students over three years. | $193,136 | Funding cycle 2007-2009 |
| PRESENT  
Principal Investigator, U.S. Army Department of Defense | 20% | Partnering Research Involving Mentoring and Education (PRIME) in Prostate Cancer Training Grant with North Carolina Central University to provide beginning prostate cancer education to 12 undergraduate nursing students over three years. | $199,000 | Funding cycle 2005-2008 |
| Principal Investigator, U.S. Army Department of Defense (Co-PI Mentor: Cary Robertson, M.D., DUMC) | 47% | Prostate Cancer Screening, Health Disparity Research-Prostate Scholar Award: Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics  
Mentor: Cary Robertson, M.D.  
Scientific Mentor: Paul Godley, M.D., Ph.D., Surgical Oncologist,  
Attend monthly seminars in Methods in Health Disparity Research, cosponsored by the Cecil Sheps Center, UNC School of Public Health; and Lineberger Comp. Cancer Center.  
PI, Cervical Cancer Screening, International Nurses Survey | $406,421.00 | Funding cycle 2002-2006 |
|  |  | Attitudes and Practices for Cervical Cancer Screening Among International Nurses in Cancer Care.  
Surveys conducted at the UICC Congress, Oslo, Norway, June-July | $500 | District Eleven, North Carolina Nurses Association  
June 2002-June 2003 |
PI, Department of Defense 30% Using a Tracking System to Improve Prostate Cancer Screening Follow-up in a Small Urban Area $74,984 2000-2001


PI, (Pre-doctoral Fellow), NCI sponsored Cancer Control Education Research Program (CCEP)
University of North Carolina Lineberger Comprehensive Cancer Center, Training Grant –CA64060
PI, Association of School of Public Health and The Association of Teachers of Preventive Medicine, National Center for Infectious Disease, Division of HIV/AIDS, Surveillance Branch, CDC, Atlanta


Protocol Development for Resource Assessment of HIV+ pregnant women’s access and use of AZT and other social and medical resources $23,000 1994-1995

Clinical Practice (after hours back-up):
Family Nurse Practitioner, Duke University Medical Center Department of Obstetrics and Gynecology, Durham, NC, for Lincoln Community Health Center Prenatal Clinic; approved to practice by the NC Board of Nursing & NC Medical Board to practice as FNP.


Acting Program Director, Oncology Nursing Curriculum, Fall 1999 to August 2000, 30 advisees.

Assistant Professor, School of Nursing, Duke University, Durham. 8/1996-.
Master of Nursing Family Nurse Practitioner Specialty Director, 2002 - 75 Master of Nursing students.

Appointment, Duke University Comprehensive Cancer Center, Department of Cancer Control and Prevention, 2003

Assistant Professor, School of Nursing, Duke University, Durham. 8/1996-.
Master of Nursing Family Nurse Practitioner Program.

Appointment, Duke University Comprehensive Cancer Center, Department of Cancer Control and Prevention, 2003
Association Between Inflammatory Markers and Prostate Carcinogenesis:  
A Meta-Analytic Review

Shunyoung Smith, B.A.

**Background:** Several inflammatory markers are associated with the diagnosis and progression of prostate cancer, but little has been researched regarding the role of inflammation in the actual development of prostate cancer.

**Purpose:** The purpose of this study is to investigate the link between inflammatory markers and prostate cancer.

**Hypothesis:** Elevated levels of certain inflammatory markers are associated with prostate cancer.

**Methods:** An exhaustive literature review was performed using a medical research library, as well as online databases (including PubMed). A meta-analysis was performed to provide an estimate of the magnitude of the effect of inflammatory markers on prostate carcinogenesis.

**Results:** The meta-analysis indicated a fixed effects odds ratio of 1.07 (p = 0.19) for the overall effect of inflammatory markers on prostate cancer. The random effects odds ratio approached significance at 1.19 (p = 0.08). The trend toward significance indicates that inflammatory markers may be associated with prostate carcinogenesis. In a moderator test for the specific type of marker associated with prostate cancer, Leptin was found to be directly associated with prostate carcinogenesis, with an odds ratio of 1.66, p<.001.

**Discussion:** Inflammatory markers are associated with the onset and progression of prostate cancer. With more research, a more extensive study can be performed in order to identify the effect of inflammatory markers. For example, exploring the inflammatory marker Leptin on the gene level will be beneficial to research in terms of prevention and treatment.
Comorbid Medical Conditions and Post-Treatment Quality of Life in African American Prostate Cancer Survivors

Ashton C. Fearrington

Background: African American prostate cancer survivors report more comorbid medical conditions than Caucasian prostate cancer survivors. However, little is known about how comorbid medical status relates to the post-treatment symptom experience of African American prostate cancer survivors. Given that prostate cancer survivors must often contend with multiple symptoms following treatment (e.g. sexual, urinary, bowel symptoms), having a comorbid medical condition may reduce quality of life. Purpose: This project examined the relationship between comorbid medical conditions and quality of life as indicated by sexual, urinary, bowel, and hormonal symptoms in African American prostate cancer survivors. Methods: Participants were 40 African American prostate cancer survivors (M_age = 61.4 years) who were past the acute treatment and recovery phase of their prostate cancer treatment. Participants completed a demographic questionnaire and the Expanded Prostate Cancer Index, a measure of quality of life related to sexual, urinary, bowel, and hormonal symptoms. Analysis of Covariance was used to examine symptom-related quality of life in men without comorbid conditions as compared to men with 1 or more comorbid medical conditions. Results: Fifteen men (37.5 %) reported no comorbidities and 25 men (62.5 %) reported 1 or more comorbidities. The most frequent comorbid conditions were circulation problems in legs/feet (22.5%), breathing problems such as asthma or emphysema (22.5%), and stomach ulcer or irritable bowels (22.5%). Age was positively correlated with number of comorbid conditions; therefore, age was used as a covariate in the ANCOVA. Men with comorbid medical conditions reported lower quality of life with regard to bowel function (F [2,37] = 6.51, p = .015), bowel bother (F [2,37] = 9.69, p = .004), and overall quality of life related to bowel symptoms (F [2,37] = 9.76, p = .003), than men with no comorbid medical conditions. Men with comorbid medical conditions also reported lower quality of life in regard to hormonal bother (F [2,37] = 12.58, p = .001) and overall hormonal quality of life (F [2,37] = 8.25, p = .007), than men with no comorbid medical conditions. Implications: Prostate cancer survivors with comorbid medical conditions reported significantly lower quality of life related to bowel and hormonal symptoms follow prostate cancer treatment. These findings suggest that post-quality treatment quality of life in African American prostate cancer survivors is linked to overall physical health. Management of comorbid disease may help improve prostate cancer-related quality of life in these survivors.
The Differences between African-Americans and Non-African Americans With Regard to Prostate Specific Antigen From The PSA Era to Present

Kenneth C. Joseph, B.A.

**Background:** African–American (AA) men have been disproportionately affected by prostate cancer (CaP). This study serves to examine the trends in CaP presentation from the beginning of the PSA Era (1988) to present. Differences in the range of PSA levels between the AA group and the Non-AA group were also examined.

**Methods:** Subjects in the study were taken from 14,908 patients in the Duke Prostate Cancer Database. Patients younger than 50 years of age or with unknown race were omitted. The final sample size was 10,527. The racial groups compared were AA-men and Non-AA-men including Caucasian, Latinos, and Asians.

**Results:** The results showed that AA–men had much higher PSA levels than Non-AA men during the earlier years. The range of PSA levels within the groups was greater in AA-men (8-36.7 ng/ml) than Non-AA-men (4.7-17.6 ng/ml). The range in PSA levels has been decreasing steadily within the racial groups from 1988 to present. The disparity in PSA levels between the groups of AA-men and Non-AA-men has been declining steadily over time.

**Discussion:** The amount of the disparity has been declining in the more recent years as screening in AA men now occurs at earlier ages.
The Effects of Age and Race on Gleason Score and Tumor Stage

Alisha Childs

**Background:** It is suggested by many that race and age play a large role in both tumor stage and Gleason score of prostate cancer while some studies suggest that there is no relationship.

**Purpose:** The current study evaluated the effects of age and/or race on the Gleason score and tumor stage of prostate cancer.

**Hypothesis:** Both age and race will affect Gleason score and tumor stage based on the analysis of patient records.

Methods: Records were obtained for 14,908 patients from the Duke Prostate Cancer Database. Among them, 4581 men received a radical prostatectomy between 1988 and 2006. The data used in this study included those who received a radical prostatectomy between 2000 and 2006. The exclusion criteria included the following: those under age 50, those who received a biopsy, and those with unreported variables such as race. After exclusions were made, the data consisted of 143 African American (AA) men and 759 non-African American (AA) men. These men were divided into the following age groups: those in their 50’s, 60’s, 70’s, and men over 70.

**Results:** Over 60% of AA men diagnosed had a Gleason score $\geq 7$ regardless of age. Non-AA men did not present a difference in their Gleason scores by age. AA men were more likely to be diagnosed at T3/4 stage compared to non-AA who had a higher percentage of those diagnosed at T2. Also, it was suggested that over 80% of non-AA men had surgery, while less than 17% of AA men chose surgery. With Gleason score, more AA men were diagnosed with a Gleason score $\geq 7$. Non-AA participants did not present difference in Gleason score across age.

**Discussion:** Race, rather than age is associated with Gleason score. The majority of non-AA men were diagnosed with a less severe T2 stage. AA men have a higher percentage of T3/4 state and high Gleason scores, indicating that their cancer would grow and spread more rapidly compared to non-AA men.

Student P.E.

The Association of Race on Prostatic Specific Antigen (PSA) Velocity and PSA Doubling Time Prior and Post Radical Prostatectomy

Goal: To understand PSA values and prostate cancer development

Objective: To compare racial influence on PSA Velocity (PSAD) and PSA Doubling Time (PSAD).

**Background:** African American men are known to have earlier onset of prostate cancer (Pca), higher PSA values at diagnosis, and more advanced presentations of prostate cancer.
Research has identified elevated prostate-specific antigen (PSA) levels and rates of change in PSA levels between consecutive visits as early clinical markers for Pca development. A PSAV higher than 0.75 ng/ml/yr is associated with a higher probability of Pca development; secondly, a PSAD less than 12 years is also predictive of increased risk for Pca development.

**Rationale:** Knowledge of rate of change of the PSA is valuable for clinicians and advanced practice nurses to appropriately counsel their patients on the frequency of routine screening for Pca, and implications for the test results.

**Methods:** My data set included pathology results from biopsies of 357 men suspicious for Pca who had undergone radical prostatectomy. Exclusion criteria were determined with a resultant sample of 149. This included 118 Caucasians, 20 African Americans, 1 Asian, 1 American Indian, and 9 race unknown. All of the biopsy procedures were done between 1997 and 2005 at Duke University Medical Center in Durham, North Carolina. Records from the Microsoft Access data base were access using the Duke University eBrowser to access my mentor, Dr. Leon Sun’s Pca database. Microsoft Excel was used to analyze my data.

**Results:** Caucasian patients had a higher average PSAV (27.67 ng/ml/yr) before surgery. African American men had a higher average PSAV (1767.89 ng/ml/yr) post surgery. Caucasian men had a lower average PSAD (0.94) before surgery and the African Americans had a lower average PSAD (0.52) post surgery. Data analysis found that a higher PSAV or lower PSAD are indicators of a higher mortality rate or lower chance of surviving Pca. African American men had a higher PSAV prior to the radical prostatectomy but ended up having the lower PSAD afterwards.

**Implications:** PSAV and PSAD should be watch more carefully by clinicians for early informed discussions about prostate cancer screening, especially among African American men.
STUDY PERSONNEL

Marva Price, DrPH, RN, FAAN  Principal Investigator
Duke University Medical Center
School of Nursing

Lorna H. Harris, PhD, RN, FAAN  Collaborating PI for North Carolina Central University
Department of Nursing

Cathrine Hoyo, PhD, MPH  Consultant Mentor

Cary N. Robertson, MD, PhD  Consultant Mentor

Seronda Jackson, MS PhD/c  Consultant

Diana Tyson, MA, doctoral student  Research Assistant
PI CONTACT INFORMATION

Marva M. Price, DrPH, RN, FAAN, Family Nurse Practitioner
Assistant Professor
Duke University School of Nursing
Box 3322 DUMC
Durham, NC 27710-3322

Phone: 919-684-9381

Email: marva.price@duke.edu