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Award Number: **W81XWH-12-1-0114**

TITLE:

**Prostate Cancer Research Training in Health Disparities for Minority Undergraduates**

PRINCIPAL INVESTIGATOR:

**Flora A. M. Ukoli**

CONTRACTING ORGANIZATION:

**Meharry Medical College  
Nashville, TN 37208**

REPORT DATE:

**April 2013.**

TYPE OF REPORT:

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

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<b>13. SUPPLEMENTARY NOTES</b>					
<b>14. ABSTRACT</b> Meharry faculty mentored six Fisk university students by providing training opportunities in ongoing research projects. Four students were rated as excellent, and two students were rated as good. The students are still undergraduates at Fisk University and are yet to apply for postgraduate positions. The students reported that the program met its training objectives but two students did not understand why they had to carry out community outreach as part of research. All six students prepared posters; four are completed while two are near completion. We met all four training program aims to: 1). Improve knowledge about PCa epidemiology and ethnic disparity. 2). Enhance familiarization with research methods, and critical review of the literature. 3). Improve understanding of communication networks in the African-American community, and Human subject protection training. 4). Improve laboratory and epidemiological methods and skills. The challenge of student commitment will be addressed in the following summer by including the requirement for interns to sign a contract to complete all program assignments.					
<b>15. SUBJECT TERMS</b> Prostate cancer, Dietary risk factors, Lycopene, Genetic predisposition, African-Americans, Cancer research training, Quality of life, Community outreach, Recruiting study participants, Cell line inhibition, Animal studies, Prostate cancer screening.					
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## **INTRODUCTION:**

*[Narrative that briefly (one paragraph) describes the subject, purpose and scope of the research.]*

The Meharry Medical College (MMC) Prostate Cancer Research Program (PCRP) funded by the Department of Defense utilizes a multidisciplinary approach to address the issue of PCa ethnic disparity. Our research cuts across basic science, translational and clinical areas, addressing issues of barriers to PCa screening, investigating the role of diet and nutrients in PCa risk, and studying biological responses of PCa cells to specific exposures in vitro and within mice models to better understand the role they may play in carcinogenesis. **The program goal** is to stimulate the interest of young scientists so as to empower them to consider an academic career in PCa research by providing summer training opportunities for HBCU undergraduates. This is an efficient strategy for sustaining the next generation of minority PCa researchers who will study PCa disparity. **Program Plan:** Fisk University was established in 1867, a couple of years after the Emancipation Proclamation, to provide a comprehensive and quality undergraduate education open to all, regardless of race, and has continued to meet its mission. Across the street from Fisk University, Meharry Medical College (MMC) has maintained an impressive history of leadership in the education and training of minority physicians, and the provision of health services for minority populations in the United States since 1876. These two institutions with a similar mission and passion to serve the same population of the under privileged, are conveniently located for easy collaboration, being situated on the opposite sides of Dr. D.B. Todd, Jr. Blvd, in Nashville. Creating mentorship relationships at the undergraduate level is a solid foundation for Fisk undergraduates to confidently conceptualize their educational growth in the medical field with a focus on research that will impact the African-American community positively. Given the Meharry-Vanderbilt Alliance since 1999, retention of our NCI Comprehensive Minority Institution/Cancer Center Partnership (U-54) grant since 2000 in partnership with the Vanderbilt-Ingram Cancer Center, and several independently funded investigators at Meharry, we are in a very good position to offer a summer training program for undergraduates. This program will enhance knowledge, research competence and skills, foster positive attitude to biomedical research, stimulate interest in prostate cancer research, develop strong mentorship relationships that are expected to continue beyond this period. The program curriculum included tutorials, seminars, community activities, laboratory experiments, data collection, data management, and development of research reports. **Program aims:** 1). Improve knowledge about the epidemiology of prostate cancer, and the existing ethnic disparity in both incidence and mortality statistics. 2). Enhance familiarization with research methods and the ability to critically evaluate scientific literature in the area of prostate cancer. 3). Improve the understanding of the dynamics of developing, maintaining and sustaining communication networks in the African-American community, and undergo Human subject protection and safety training. 4). Improve laboratory and epidemiological methods and skills particularly related to the research projects of the mentors in this program. **Projects:** 1). Community-Based Participatory Research: A prostate cancer education program for low-income African-Americans. 2). Basic science research: Regulation of the Erk signaling pathway by the PPAR gamma ligand troglitazone. 3). The role of lycopene (antioxidant) in prostate cancer risk among African-Americans and Africans. 4.) Case-control study of pesticide exposure and prostate cancer in African American and Caucasian men. 5). Urology symptoms in Nigerians. The program advisory board is composed of MMC and Fisk faculty and headed by Derrick Beech, M.D., professor and chair of surgery at Meharry.

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**BODY:**

*[This section of the report shall describe the research accomplishments associated with each task outlined in the **approved** Statement Of Work. Data presentation shall be comprehensive in providing a complete record of the research findings for the period of the report. Appended publications and/or presentations **may** be substituted for detailed descriptions but **must** be referenced in the body of the report. If applicable, for each task outlined in the Statement of Work, reference appended publications and/or presentations for details of result findings and tables and/or figures. The report shall include negative as well as positive findings. Include problems in accomplishing any of the tasks. Statistical tests of significance shall be applied to all data whenever possible. Figures and graphs referenced in the text may be embedded in the text or appended. Figures and graphs can also be referenced in the text and appended to a publication. Recommended changes or future work to better address the research topic may also be included, although changes to the original Statement of Work **must** be approved by the Grants Officer. This approval must be obtained prior to initiating any change to the original Statement of Work.]*

**Statement of Work:**

**Task 1:                      Start-Up Phase and Plan Development                      (Month 1 – 4)**

Planning for this summer program started at the beginning of the academic year with discussions with relevant administrators (Vice-President for research at MMC, the Provost at Fisk University, Fisk Grant Manager, and Shirley Rainey-Brown (Co-PI). Due to illness Dr. Brown had to find a substitute Co-PI, Jennifer Adebango, Ph.D., who therefore submitted a letter of support to become the new Co-PI. This personnel change and budget revisions were then submitted to the DOD for approval.

Selection of Summer Interns: Program Advertisement:

- Year 1:            February 2012
- Year2:            February 2013

- 1        Co-PI informed faculty at Fisk University to encourage their students to apply for and make use of the opportunity using mass email.
- 2        Distributed flyers on Fisk University Campus.
- 3        Seminar hosted at Fisk University at which program mentors show-cased their research projects (See Appendix 1: Program Seminar Flyer)
- 4        Seminar presentations: Five pilot projects were presented by the program mentors at the Seminar hosted at Fisk University.
- 5        PI identified Meharry faculty relevant to this program, met with them individually, and secured their cooperation to participate as speakers in the program tutorials.
- 6        Development and Design of program materials:
  - Application package (Appendix 2)
  - Program evaluation tool (Appendix 3)

Deliverables: Meetings	2	Seminar	1
Speakers	20	Program related documents	6 Posters

**Task 2:                      Training Primary Mentors                      (Month 3 – 4)**

The PI conducted similar summer internship training between 2008 - 2010, and that experience made it easier to run this program this time. The new Co-PI went to an individualized orientation and was able to carry out her role as expected. A new program mentor, Sakir Abdulkadir, is an experienced professor and mentor at Vanderbilt University and he had undergone mentoring training in the past. He has post-doctoral and doctoral students in his laboratory to also assist him to mentor undergraduates. Ms. Monica Logan, a doctoral student, was identified to assist him in this program.

Each mentor had access to the Meharry Office of Faculty Development for additional support to update regarding mentoring skills.

Deliverables: No research team meeting was held in 2012. Rather the PI met privately with each primary mentor.

**Task 3:                      Development of research apprenticeship program                      (Month 3 – 5)**

Core course for all trainees: A core prostate cancer course was developed for this program and experts were invited to deliver presentations to the interns. The interns also received detail information about each primary mentor's research projects, and they also received expert presentations from external prostate cancer researchers from Howard University, Washington DC and Atlanta GA.

Training program (Apprenticeship): Each mentor developed an apprenticeship plan for each of the students they mentored. This involved expecting them to read scientific materials in the area of study, get involved in data collection in the laboratory or in the community, and where applicable learn to manage electronic data base, analyze and interpret statistical reports.

Deliverables: Course work (Appendix 4).

**Task 4:                      Program Implementation                      (Month 5 – 12)**

Year 1: The Summer Program ran for 9 weeks starting from May 21, 2012 - August 3, 2012. The program started off with a one-week PCaRT Short Cancer Course at which students received introductory information in various research related fields from 20 experts. After the one week intense course work the interns spent the following 8 weeks completing the following training process:

- 1 Literature review
- 2 Critical reading and summarizing of topic related research articles (At least 3)
- 3 Reading and understanding research project aims and objectives, methods, and protocols.
- 4 Conducting research
  - a. Basic science projects (Laboratory experiments)
  - b. Community-based research (Outreach, participant recruitment, and consenting)

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- 5 Data collection and Data management (Interviewing participants, data entry)
- 6 Data analysis and preparation of results
- 7 Preparing reports and/or posters

The mentoring relationship was maintained after the summer to varying degrees by each mentor-mentee pair. The Co-PI was contacted as needed to track summer interns during this period.

Deliverables for 2012:

- 6 Posters. (Appendix 5: Poster Titles)
- 6 PowerPoint presentations.

**Task 5:                      Report and Presentation of Program Outcome                      (Not Applicable)**

Mentors have been reminded to keep in contact with their mentees before and after they graduate, providing them with letters of recommendation as they apply for positions in graduate schools all over the country. The Co-PI started talking to students and faculty at Fisk about the program for the next summer. The PI contacted two Fisk University fraternities to distribute information about the summer program. Four students took the community navigator opportunity offered to work on the PI's ongoing community prostate education program.

We plan to source for funds to continue summer training program for undergraduates, and will be responding to the 2013 DOD PCRP announcement and the NIH R25 program announcement.

Deliverables:

- Tracked all six 2012 summer trainees.
- Program Booklet      (Appendix 6)

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**KEY RESEARCH ACCOMPLISHMENTS:**

[Bulleted list of key research accomplishments emanating from this research.]

This program succeeded in meeting its goal of establishing a prostate cancer summer research training for HBCU undergraduates at Meharry Medical College.

1. The prostate cancer summer research program (PCaRT) has been established at Meharry Medical College, and the program has been implemented the in its entirety in the summer of 2012.
2. 6 HBCU undergraduates were involved in pilot projects under the mentorship of Meharry faculty in the area of basic, translational and clinical research, and they submitted course evaluations.
3. Two of the mentor-mentee teams include collaboration with investigators from Vanderbilt University.
4. The program has access to two basic science research laboratories at Meharry developed by Dr. Stewart and Dr. Chen, and two epidemiology research programs developed by Dr. Sanderson and Dr. Ukoli.
5. A summer intern from 2010, Bomadi Ogaga, was maintained in the PI's program as a research assistant. Uncompleted PowerPoint presentation titles "The role of massage in cancer therapy"
6. Pilot Projects.

<u>Name</u>	<u>MENTOR</u>	<u>RESEARCH AREA</u>
Favours, Jacquelyn	SANDERSON, M.	PCa Community-Based Research
Shelton, Debresha	STEWART, L.	PCa Cell Study
Sease, Ayeshka	CHEN, Z.	PCa Animal Model Study
Jones, Candace	UKOLI, F.	PCa Community-Based Education Intervention
Davis, Contessa	UKOLI, F.	PCa Dietary Vitamin E Case-Control Study
Blassingame, Raquel	ABDULKADIR, S	PCa Animal Model Study

Project 1: (Ayesha Sease): Identification of Pten Inactivation in Genetically-Engineered Mouse Models. (Mentor: Zhenbang Chen).

Project 2: (Raquel Blassingame): The Role of NKX3.1-regulated gene, *RAMPI*, in Prostate Tumorigenesis. (Mentors: Abdulkadir & Monica Logan)

Project 3: (Jacquelyn Favours): [Prostate Cancer Screening Among Diabetics and Non-Diabetics](#). (Mentors: Maureen Sanderson & Jay Fowke)

Project 4: (Contessa Davis): Dietary Vitamin E Intake and Prostate Cancer Risk in African American Men. (Mentor: Flora Ukoli).

Project 5: (Candace Jones): Religion and Prostate Cancer Screening Habit of African-American Men. (Mentor: Flora Ukoli)

Project 6: (Debresha Shelton): The Effect of Androgen Receptor Function on Pioglitazone Responsiveness in Prostate Cancer Cells. (Mentor: LaMonica Stewart).



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**REPORTABLE OUTCOMES:**

*[Provide a list of reportable outcomes that have resulted from this research to include:]*

Year 1:

1. Laboratory research:
  - i) 3 completed research project with results.
2. Community-Based Participatory Research
  - i) Two completed sub-projects with results
  - ii) One partially completed sub-project.

Deliverables: 6 Posters displayed to Meharry faculty and students at the end of the program.

**CHALLENGES:**

**Selection of Summer Interns:**

Our previous method of selecting summer interns was based on interview performance. Invitation to interview was based on their application statement of interest in a biomedical research career pathway. Towards the end of the intern period some interns expressed the desire for the type of research they were not assigned to. To avoid this in the future students will be required to state the pilot project they prefer and will only be interviewed for that position.

For year 2 we plan to interview all applicants with an average of 4 applicants per mentor. Mentors will have the option to terminate an intern who is not performing to the standard expected.

**Report Preparation:**

Unlike laboratory research, community-based projects take much longer to implement and data management is also more complex. Students were therefore not able to complete the process of data analysis and interpretation. They were therefore expected to focus more on the following areas: Introduction, Aims & Objectives, and Materials and Methods. Only preliminary results were expected from the students at the conclusion of the summer, and they had to work with the mentor thereafter to complete the project posters and final reports.

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**CONCLUSIONS:**

*[Summarize the results to include the Importance and/or implications of the completed research and when necessary, recommend changes on future work to better address the problem. A "so what section" which evaluates the knowledge as a scientific or medical product shall also be included in the conclusion of the report. ]*

The Department of Defense may consider requesting application for grant renewal for another two-year period to maintain the momentum of collaboration between Meharry Medical College and Fisk University undergraduates. This program has successfully stimulated the interest of seventeen minority undergraduates in the area of prostate cancer disparity research, they have all demonstrated and showed evidence of their ability to conduct good research, two are already in medical school, one has been admitted to school of dentistry, one is already in a graduate program, and a fifth has applied to graduate school.

Mentors will also have to apply for additional funds to maintain their enthusiasm for training undergraduates in biomedical research.

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REFERENCES: *[List all references pertinent to the report using a standard journal format (i.e. format used in Science, Military Medicine, etc.).]*

APPENDIX:

Appendix 1: Program Seminar Flyer

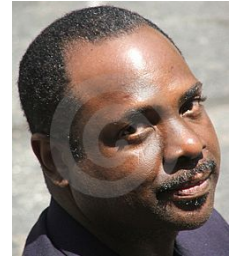
Appendix 2: Application Package

Appendix 3: Program Evaluation Forms

Appendix 4: Program Coursework

Appendix 5: Poster Titles

Appendix 6: 2012 Program Booklet



***MEHARRY MEDICAL COLLEGE AND FISK UNIVERSITY  
INVITES YOU TO THE***



**Thursday, March 14, 2013**

**11:30 a.m. - 1:00 p.m.**

**Appleton Room**

*Valuable information about the opportunity to participate in the 2013 Prostate Cancer Summer Research Training Program sponsored by the US Department of Defense will be provided. Successful student applicants will be expected to complete a pilot research project during this period, and will be paid a stipend as summer interns.*

*5 research professors from Meharry Medical College & Vanderbilt University will be presenting their prostate cancer research.*

*Lunch will be available for the first 40 students.*

***“COME LEARN MORE ABOUT THIS GREAT OPPORTUNITY”***



School of Medicine
Department of Surgery

Prostate Cancer Research Training in Health Disparities for HBCU Undergraduates (PCaRT Program)

2013 APPLICATION FORM
Due: By 4:00pm. Friday 12th of April, 2013.

Instructions: Complete the application to the best of your ability. Incomplete applications will not be considered. Type or print in blue or black ink. The recommendation letters should be enclosed in sealed envelopes. Staple the essays, transcript, and envelopes to the signed application form.

Last Name First Name Middle Name

SS # - - DOB / / Gender: Male Female
MM DD YY

Class Standing Fr So Jr Sr Major Advisor Phone #

Major: GPA Expected Graduation Date / / Degree

Current Mailing Address & Phone Permanent Address & Phone (Parent / Guardian)

Number/Street Number/Street

City/State/Zip City/State/Zip

Current Phone # ( ) - Current Phone # ( ) -

School Email Address: Parent Email Address:

Personal Email Address: Parent Name:

High School Attended Address City State Zip

List Science related Courses that you have taken or that you are currently taking?

Blank lines for listing science related courses.

List extracurricular activities and special talents (include school, community, health, religious, and etc.):

- 1) 3) 5)
2) 4) 6)

Are you: \_\_\_ U.S. Citizen \_\_\_ Permanent Resident \_\_\_ Legal Alien Visa # \_\_\_\_\_

**Self-Identification**

\_\_\_ African-American/Black \_\_\_ White \_\_\_ Specify Others \_\_\_\_\_

What health career are you planning to pursue? (Summary)

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Check if you have ever been immunized for: Tuberculosis (TB) \_\_\_\_\_ If so, when \_\_\_\_\_

Hepatitis \_\_\_\_\_ If so, when \_\_\_\_\_

Provide your health insurance information:

---

Provider	Policy #	Telephone#
----------	----------	------------

---

Emergency Contact Name	Phone#	Relation to You
------------------------	--------	-----------------

Signature \_\_\_\_\_

Date \_\_\_\_\_

**APPLICATION SUBMISSION**

**Important:** Because of the large number of applicants, if all of the following **does not** accompany your completed application, you will **not** be considered for placement in this program.

1. One letter of recommendation: – Letter can be from a Fisk University faculty.  
– Letter **must** be received in a sealed envelope.
2. Personal Statement (1-2 pages) about your long term goals and why you think you deserve this award.  
– Typed in 12 fonts, single-spaced.
3. Official copy of your most recent transcript
4. One letter of recommendation from a community member (Volunteer center, religious organization, etc.)

**Return or mail completed application packet to:**

Dr. Jennifer Adebajo, Department of Sociology, Park Johnson Building, Room 311, Fisk University, 1000 7<sup>th</sup> Ave. North, Nashville, TN 37208 Office (615) 329-8756 E-Mail: [jadebanj@fisk.edu](mailto:jadebanj@fisk.edu)

**For additional information or questions:** Contact Dr. Flora A. M. Ukoli, Program PI at [fukoli@mmc.edu](mailto:fukoli@mmc.edu)

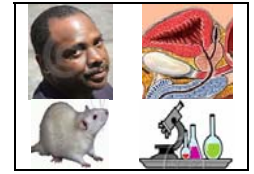
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1005 Dr. D. B. Todd, Jr., Blvd.  
Nashville, TN 37208-3599  
Phone: (615) 327-6342 Fax: (615) 327-5579



# PROGRAM EVALUATION FORM

## The Prostate Cancer Research Training (PCaRT) Program Summer 2012



Intern Name: Contessa Davis \_\_\_\_\_

Date: \_8/6/12\_

This evaluation provides you the opportunity to assess your Cancer Health Disparity Research Summer Intern. The results will be used to provide a basis for inviting the student back next summer, and may provide some insight into improving the selection process in the future. ....*Thank you!!*

SECTION 1: Items A-D should be answered according to the following scale:

- E = Not Applicable
- D = Strongly Disagree
- C = Mildly Disagree
- B = Mildly Agree
- A = Strongly Agree

### A. Organizational Structure

1. The Intern attended all program research activities on time.	<b>A</b>	B	C	D	E
2. The Intern exhibited a high degree of interest in the research process/project.	A	<b>B</b>	C	D	E
3. The Intern performed research tasks diligently.	A	B	<b>C</b>	D	E
4. The Intern demonstrated a high level of understanding of research material/information.	A	<b>B</b>	C	D	E

### B. Instructor-Student Interaction or Rapport

5. The Intern discussed freely and was open to my opinions and suggestions about research.	A	<b>B</b>	C	D	E
6. The Intern was able to provide reasonable answers to research related questions.	A	<b>B</b>	C	D	E
7. The Intern actively assisted me with difficulty research challenges.	A	B	C	<b>D</b>	E
8. The Intern responded to my research project related concerns effectively.	A	<b>B</b>	C	D	E

### C. Communication Skills

9. The Intern spoke clearly and was comprehensible.	<b>A</b>	B	C	D	E
10. The Intern was ready to learn new research techniques/methods.	<b>A</b>	B	C	D	E
11. The Intern was respectful to research participants.	<b>A</b>	B	C	D	E
12. The Intern was respectful to research animals/cells & equipment/materials/ supplies <b>N/A</b>	<b>A</b>	B	C	D	E
13. The Intern's reports/presentations were almost always focused.	A	<b>B</b>	C	D	E
14. The Intern is competent / skilled in collecting research data.	<b>A</b>	B	C	D	E
15. The Intern is competent / skilled in collating and managing research data.	A	<b>B</b>	C	D	E
16. The Intern's poster has been developed to an acceptable standard.	A	<b>B</b>	C	D	E
17. The Intern is capable of summarizing and emphasizing major research findings.	<b>A</b>	B	C	D	E

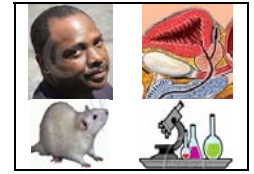
### D. Workload Difficulty & Evaluation

18. The Intern needed very little help to understand the research related protocol and manuscripts.	A	B	<b>C</b>	D	E
19. The Intern was able to complete research tasks in the allocated time.	A	B	<b>C</b>	D	E
20. The Intern was able to complete research reading materials in good time.	A	B	<b>C</b>	D	E
21. The Intern's overall performance was commendable.	A	<b>B</b>	C	D	E
22. I am willing to invite the Intern back next Summer to continue with the research project.	A	B	C	<b>D</b>	E



## PROGRAM EVALUATION FORM

### The Prostate Cancer Research Training (PCaRT) Program Summer 2012



#### Section 2: Open Remarks/Suggestions.

Please indicate below notable observations you have about the Intern. **Please be specific....give examples.**

Domains	Comments
Strengths	Contessa is quite intelligent, but it was easy to notice that she was not really interested in a research project. She definitely understood what was expected of her but just never completed the tasks especially the periods I was away from the office. Candace arrived at work on time and stayed at her desk facing the computer. It was difficult to for me to understand why she did not read, summarize, and list the necessary manuscripts for this work.
Challenges	<p>She did not admit to understanding how to interrogate a data set, carry out necessary statistical analysis, and develop appropriate tables from the statistical printout. Her Table 1 had to be revised several times. She was unable to develop an appropriate graph to display her work. Most likely statistical analysis was new to her and she under-rated what was needed to accomplish the task.</p> <p>She was normal until the last 2 days when a new attitude emerged. She was rather confrontational, which surprised me. At the end she declared lack of interest in the program. Again, that was a surprise to me. She does not even want to attend the IMPaCT conference and so I am not be willing to work with her beyond this summer.</p>
Suggestions for improvement	My suggestion is that Ms. Davis should have opted out of the program when she realized she was not interested in this type of research. However she wanted the stipend and stayed just for that. She certainly undermined my position as a mentor and referred to constructive criticism as 'talking down'. I worry that lack of respect for people in authority will be a problem for her.
Others:	<p>Ms. Davis was assigned to oversee a Guest lecture event in my absence and was unable to successfully do this, bringing to question her leadership skills.</p> <p>The program might require mid-point evaluation to decide if a student remains till the end.</p>
<p>In a grade of <b>A</b> (Excellent); <b>B</b> (Very Good); <b>C</b> (Good); <b>D</b> (Fair), <b>E</b> (Poor) what grade will you give the Intern? <u>  B  </u></p>	

Mentor:           Signature\_

Print Name: Flora A. M. Ukoli\_\_\_\_\_



**Summer Course: Prostate Cancer Disparity Research**

(1 Credit Load)

## Required Coursework

This summer training program will include a core didactic scientifically sound curriculum designed at the undergraduate level to provide essential knowledge and skills needed to conceptualize research ideas, develop research hypotheses, select an appropriate method, statistical analysis, the fundamentals of data interpretation and presentation of results. The curriculum integrates selected topics from the MSPH, the Meharry Doctor of Science, and the Health Disparities/Culture and Health programs.

Introduction to Epidemiology	3 hours
Prostate Cancer Epidemiology	3 hours
Clinical Research Methods	3 hours
Cancer Biology: Biology of prostate cancer	3 hours
Genes associated with prostate cancer risk	3 hours
Health Disparities: Culture and Health	3 hours
Research Ethics	3 hours
Grant Writing	2 hour
Environmental Health	2 hours
Behavioral Methods	2 hours
Biostatistics: Data Analysis (Hands-On)	3 hours
Total	30 hours

## Description of units within the course:

*Introduction to Epidemiology:* Introduction to the basic concepts of epidemiology as the study of the distribution and determinants of disease in human populations. The historical roots and uses of epidemiology and the evolution of its methods will be described. The course will also focus on the application of the principles and tools of epidemiology in the decision-making process in the evaluation and planning of health programs. Three major subject areas are included – descriptive epidemiology and the calculation of rates, methods used in analyzing disease outbreaks, and methods of analytical epidemiology (case-control studies, cohort studies and clinical trials).

*Prostate Cancer Epidemiology:* Describe the trend in the incidence and mortality of prostate cancer in different parts of the world, with focus on the pattern for African-American population. Discuss environmental and genetic risk factors for prostate cancer.

*Clinical Research Methodology:* Introduction to a variety of research methods, especially the logic of research design and procedure, data analysis, and the reporting of research, both in theory and practice. Course objectives include discussion and application of principles, practices and methods associated with defining the research question, defining hypotheses, research design, sampling techniques, data collection, data analysis and data interpretations. All trainees will be required to present and critique an instructor-approved journal article that demonstrates research methodology as discussed in the course. Trainee's original research proposals will be reviewed, discussed and revised.

*Cancer Biology: Biology of prostate cancer:*  
To be developed.

*Genes associated with prostate cancer risk:*  
To be developed.

*Health Disparities:* A brief review of the complex subject of health disparities with a special emphasis on disparities in the incidence, prevalence, evaluation, treatment, control, and health outcomes of prostate cancer will be discussed. The strengths and limitations of current methodologies for evaluating health disparities will be discussed, introducing the national surveys and data collection systems available at the CDC to support epidemiological and public health research in chronic disease disparities. Current strategies designed to help eliminate health disparities in general will be addressed. The hypothesis-driven approach and a methodology-based approach will be described.

*Culture and Health: An Ethnographic and Qualitative Approach:* Briefly examine the roles of race and racism as powerful cultural constructs and ethnicity as a part of cultural identity in shaping individual and community health chances and choices at multiple levels. Emphasis will be placed on analysis of broader systems of culture, socioeconomic structures and psychological conditions that contribute to poverty and lack of health access.

*Research Ethics:* Introduction to the development of federal guidelines and regulations to protect human subjects who participate in research, including the historical perspectives of human subject protection.

- 1) Human subject protection and safety training (Online).
- 2) The IRB application process, Consent forms, HIPAA forms.
- 3) Regulations to protect research animals. .

*Grant Writing:* Funding agencies, Pre-doctoral grant application process (announcements and application instructions). Describe application process of various agencies such as DOD, NIH, ACS, Others.

*Environmental Health:* Introduction to environmental health from local to global perspectives and addressing environmental health issues that may be associated with prostate cancer. The overlap between environment and diet, toxicology, exposure assessment, risk assessment/risk management, air pollution, water pollution, and the built environment/urban sprawl will be discussed.

*Health Education & Health Education (Behavioral Methods):* Describe and demonstrate the use of a basic framework for systematically applying the behavioral and social sciences to address public health problems such as prostate cancer in the African-American population. Emphasis is placed on the delineation of risk behavior, their determinants, and the design and implementation of appropriately targeted health promotion and education interventions that are likely to impact critical health behaviors and health status.

## **SUMMER INTERNS POSTER TITLES**

### **Identification of Pten Inactivation in Genetically-Engineered Mouse Models**

**Ayesha Sease, Zhenbang Chen  
Fisk University, Meharry Medical College**

### **The Role of NKX3.1-regulated gene, *RAMP1*, in Prostate Tumorigenesis**

**Raquel Blassingame, Monica N. Logan, Sarki A. Abdulkadir  
Fisk University, Nashville, TN, Meharry Medical Center, Nashville, TN,  
Vanderbilt University Medical Center, Nashville, TN**

### **Prostate Cancer Screening Among Diabetics and Non-diabetics**

Jacquelyn Favours, Maureen Sanderson, Jay Fowke, Flora Ukoli,  
Fisk University, Nashville, TN; Meharry Medical College, Nashville, TN; Vanderbilt University,  
Nashville, TN

### **The Role of Religion in Prostate Cancer Screening in African-American Men in Nashville, TN**

**Candace Jones, Jennifer Adebanjo, Ph.D., Flora A. Ukoli, MD., MPH.  
Fisk University, Nashville, TN., Meharry Medical College, Nashville, TN.**

### **Dietary Vitamin E Intake and Prostate Cancer Risk in African American Men**

**Contessa M. Davis, Flora Ukoli, M.D., MPH  
Fisk University, Meharry Medical College**

### **The Effect of Androgen Receptor Function on Pioglitazone Responsiveness in Prostate Cancer Cells**

**Debresha Shelton and LaMonica Stewart  
Department of Biology, Fisk University, Nashville, TN 37208  
Department of Biochemistry and Cancer Biology, Meharry Medical College, Nashville, TN 37208**



Meharry Medical College  
Department of Surgery



Prostate Cancer Research Training Program  
(PCaRT)

**Summer Experience in Cancer Health Disparities Research**  
Basic Science, Translational, Clinical Research

*Mission*  
**To Eliminate Prostate Cancer Health Disparities**

A collaborative partnership between Meharry Medical College and Fisk University



**Wednesday, June 20, 2012**

West Basic Science Building  
Room M202

***Searching for the determinants of disease requires that we research in the laboratory as well as in the community. If knocking on each door is what it will take to win the trust of the people we serve, then that is what we shall do. If they accept our greetings and provide the information we seek then we are one step closer to finding solutions that will eliminate the health disparities that plague our people.***

# Prostate Cancer Summer Research Training in Health Disparities

## Collaborative Undergraduate Historically Black Colleges and Universities (HBCU) Program

### PCaRT Summer Program Welcome & Award Luncheon

West Basic Science Building Room M202 Wednesday June 20, 2012		
9:00am	Registration	
9:10am	Program Introductions Program Mentors 2012 Summer Training Program	Dr. Flora A. Ukoli Program PI
9:20am	Department of Surgery Welcome Address	Dr. Lemuel Dent Interim Chair of Surgery
9:30am	Meharry School of Medicine Welcome Address	Dr. Charles Mouton Dean of Medicine
9:40pm	Research & Graduate Studies at Meharry	Dr. Evangeline Motley Assistant Dean of Graduate Studies
9:50pm	Meharry Vice-President for Research Address	Dr. Russell Poland Vice-President for Research
10:00am	Greetings: Executive Vice-President Fisk University :	Dr. Princilla Evans Morris Executive Vice-President/Provost
10:10am.	Greetings: Fisk University Dean	Dr. Reavis Mitchell Dean, School of Humanities
10:20am	<b><u>SUMMER INTERN PRESENTATIONS</u></b> Prostate Cancer Screening Among Diabetics and Non-Diabetics. (Mentor: Dr. Maureen Sanderson)	Jacquelyn Favours
10:35am.	The Role of Nkx3.1 Regulated-Gene, Ramp 1 in Prostate Tumorigenesis. (Mentor: Dr. Sarki Abdulkadir)	Raquel Blassingame
10:50am.	Dietary Vitamin E and Prostate Cancer in African-American Men in Nashville. (Mentor: Dr. Flora Ukoli)	Contessa Davis
11:05am.	Identification of Pten inactivation in Genetically-engineered Mouse Models. (Mentor: Dr. Zhenbang Chen)	Ayesha Sease
11:20am.	Religion and Prostate Cancer Screening Decision in African-American Men. (Mentor: Dr. Flora Ukoli)	Candace Jones
11:35am.	The Effect of Androgen Receptor on Pioglitazone Responsiveness in Human Prostate Cancer Cells. (Mentor: Dr. LaMonica Stewart)	Debresha Shelton
11:50am	<b>LUNCH &amp; Vote of Thanks By Bomadi Ogaga, Returning Summer Intern</b>	
12:40pm	Closing Remarks	Dr. Jennifer Adebajo Co-PI: Fisk University
Funded by DOD Grant # W81XWH-12-1-0114 (PI: Ukoli, F.)		



**Mentor**

**Dr. Flora A. M. Ukoli** has over twenty years experience mentoring students in community health and research. She directs community prostate cancer education, screening and research programs at Meharry. Her focus is to identify dietary risk and protective factors of prostate cancer in African-Americans and Nigerians. Prostate carcinogenesis involves complex interactions of several environmental, hormonal and genetic predispositions, presenting numerous opportunities for student pilot projects. This summer Ms. Candace Jones will study the role of religion in prostate cancer screening behavior of African-American men while Ms. Contessa Davis will study the role of dietary vitamin E in prostate cancer risk in a case-control study design. Both mentees will be involved in community outreach, developing strong community networks based on mutual respect and trust.

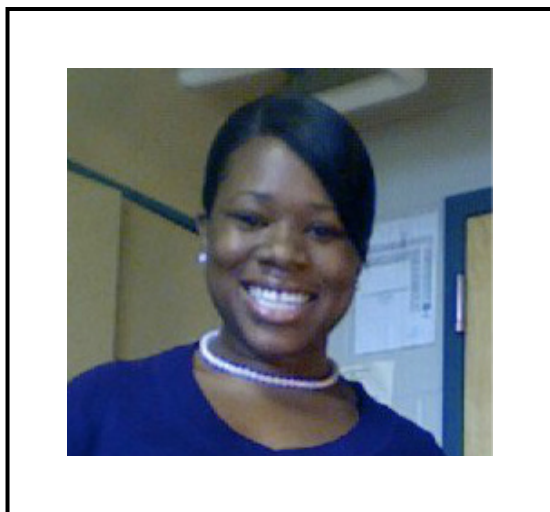
**Ms. Candace A. M. Jones**  
Sociology/Nursing Senior  
Fisk University Undergraduate

“The best way to find yourself is to lose yourself in the service of others.” ~Mohandas Karamchand Gandhi~

As a summer intern on the Prostate Cancer Research Program I will conduct research on *The Role of Religion in Prostate Cancer Screening in African American Men*. My hope is to gain knowledge to work in communities I serve in the future. My next academic goal is to attend Vanderbilt University to obtain a doctorate degree in nursing. As a future healthcare provider I find it essential to help eliminate health disparities and provide a more holistic approach toward bettering the quality of health. After the passing of her Aunt from to complications of diabetes in 2005 I decided to focus efforts to help others manage their health. I am grateful for this opportunity.



**Ms. Contessa Marie Davis**  
Biology Junior, Fisk University



“Seek ye first the Kingdom of God and His righteousness and all these things shall be added unto you.” Matt 6:33.

I come from Little Rock, Arkansas, and I am a junior majoring in biology. I hold many leadership roles at Fisk University including the exceptional position of a student health ambassador for HBCU Wellness Project. In February 2012, after a year of planning, I implemented “Stroke of Genius”, an education intervention for college students about the many risk factors of heart disease and stroke. My desire is to serve as clinician in an underrepresented community, bearing in mind the value of public health and research. Upon graduating from Fisk University, I plan to enroll in an MD/MPH dual program that will be an amalgamation of my interests in clinical medicine and public health. When I become a physician I will emphasize to my patients the importance of being aware and knowledgeable of all that may relate to directly or

indirectly to their health. I am innately passionate about serving my community and hope to become an agent of change. I believe that with faith in God and unrelenting determination all things are possible.



**LaMonica V. Stewart, Ph.D.**  
MENTOR



Dr. LaMonica Stewart is an Assistant Professor in the Department of Cancer Biology at Meharry Medical College and a member of the Vanderbilt Ingram Cancer Center. She completed her doctoral training in the Department of Pharmacology and Toxicology at the University of Texas Medical Branch (UTMB). Dr. Stewart also performed postdoctoral studies in the Laboratory of Cell Regulation and Carcinogenesis, NCI and the Department of Molecular and Cellular Biology at Baylor College of Medicine. Since 2004 she has been a faculty member at Meharry Medical College. She has experience in *in vitro* and *in vivo* studies of nuclear receptor function in prostate epithelial cells and assays designed to examine regulation of gene/protein expression and cell proliferation. She has published twelve peer reviewed papers, eleven of which are in the area of prostate cancer. In order to reduce the number of deaths and public health burden associated with prostate cancer, we must identify therapies that effectively decrease the spread of both early and late-stage prostate cancer. Compounds that activate the peroxisome proliferator activated receptor gamma (PPAR $\gamma$ ) have been shown to reduce growth of cultured human prostate cancer cells *in vitro* as well as prostate tumors in mouse models of prostate cancer. However, little is known about the mechanisms that underlie PPAR $\gamma$  ligand-induced growth inhibition, making it difficult to identify patients that would benefit from therapies involving PPAR $\gamma$  ligands. The research goal of my laboratory is to further define the pathways by which PPAR $\gamma$  ligands reduce human prostate tumor growth and progression. We are currently using human prostate cancer cell lines and athymic mouse xenograft models to define the signaling pathways that mediate PPAR $\gamma$  ligand-induced alterations in prostate cancer gene expression and cell proliferation. In addition, we are conducting studies to determine whether PPAR $\gamma$  ligands decrease cancer cell invasion and other processes required for the formation of prostate cancer metastases.

For the past three years I have been involved in community service and outreach in the hopes of gaining experience, uplifting the Davidson county community, and acquiring interpersonal skills that will prove useful in my future endeavors. I volunteer in many venues including the Black Horse Theatre, IRUNTHE PARTY Organization, Nashville Healthy Starts Program, and the First Response HIV/AIDS Center. I hope to continue this tightly bonded relationship between science and community.

My ultimate hope is to pursue a MD/ PhD degree in Immunology or Virology, join the “Doctors Without Borders” organization and travel to countries that are most affected by pandemics such as AIDS. Afterwards I will open a free clinic in my hometown of Memphis, Tennessee, to cater to high risk populations.

Ms. Shelton’s personal motto is, “Scientific innovation is the highest priced commodity of this age because it is often difficult to cultivate. It requires a specific allocation of inspiration, opportunity, passion, and necessity. The true essence of scientific innovation is born of passion and necessity; the necessities of a people inspire the passion to create in order to address them.”

**Debresha Shelton**

Biology Senior, Fisk University



**Maureen Sanderson, Ph.D.**  
**MENTOR**



Maureen Sanderson is a Professor of Family and Community Medicine at Meharry Medical College, Adjunct Professor of Medicine at Vanderbilt University and a Member of the Vanderbilt-Ingram Cancer Center. Dr. Sanderson is trained as an epidemiologist and has received funding from the Centers for Disease Control and Prevention, Department of Defense, National Cancer Institute, National Center on Minority Health and Health Disparities, and the Texas Cancer Council. Dr. Sanderson has 16 years experience as principal investigator of etiologic and intervention studies of prostate, breast and cervical cancer conducted in South Carolina and Tennessee which focused on African Americans, and in Texas which focused on Mexican Americans. In collaboration with Dr. Jay Fowke and other colleagues at Vanderbilt University, her summer intern will be working within the research

project titled “Prostate cancer screening among diabetics and non-diabetics”. Dr. Sanderson and Dr. Fowke will co-mentor Ms. Jacquelyn Favours.

**Jacquelyn Favours**

Biology Senior, Fisk University

I [REDACTED] and graduated 10 out of 313 classmates from Columbia Central High School, where I developed a curiosity for healthcare in the Biology and Anatomy classes. My career goal is to become a Gynecologist after completing a Master’s degree in Public Health.

I became interested in Public Health when I learned about health disparities while participating in Meharry’s HBCU Wellness Student Health Ambassador Training Program in the summer of 2011. I applied to the Prostate Cancer Research Training Program (PCaRT) to learn more about the effects of Prostate Cancer in African American men, and to gain further research experience and skills that will be useful in my MPH and future academic career. I am inspired by her late mother’s encouraging words, “Life is what you make of it, you might go through rough days, weeks, months, or even years; however, you can never give up and you must always aim for the best because in the end you are the only one who can motivate and ensure the achievement of the desires of your life.”



I am so grateful for this rare summer opportunity to work with Dr. Maureen Sanderson as my mentor. I thank the program PI, Dr. Flora Ukoli, for giving us all this chance.



**Sarki A. Abdulkadir, MD, PhD.**

MENTOR



**Sarki A. Abdulkadir, MD, PhD**, Director of Graduate Studies in Cellular and Molecular Pathology, is Associate Professor of Pathology, Microbiology and Immunology, and Associate Professor of Cancer Biology at Vanderbilt University. He earned the MBBS (MD) degree from Ahmadu Bello University, Zaria in 1990 and a Doctoral degree from Johns Hopkins University in 1995. He completed residency training in clinical pathology at Washington University School of Medicine in St. Louis. The focus of his research is to understand the molecular mechanisms that drive prostate cancer initiation, progression and recurrence. Dr. Abdulkadir's laboratory uses genetically engineered mice to model genetic alterations frequently found in human prostate cancer. The laboratory has a strong interest in genomics and gene regulation; oncogenic kinases as potential molecular therapeutic targets; as well as the use of in vivo lineage tracing to define the fates of specific cell populations in tumorigenesis.

**Ms. Raquel Blassingame**

Psychology Sophomore, Fisk University.

I want to become a Clinical Neuropsychologist and develop research to prevent degenerative neurological diseases. Participating in the Prostate Cancer Research Program is a wonderful opportunity to attain expert experience in research, and learn the fundamentals of working in an academic environment. I plan to learn basic science research techniques and skills that I will use in my future academic career.

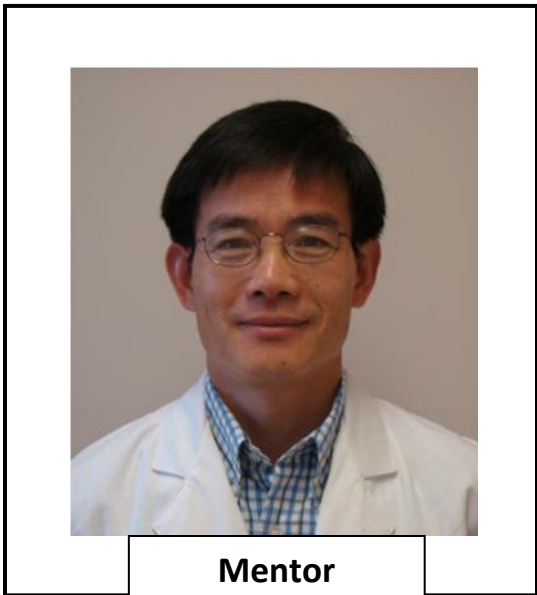
My interest in neuropsychology started from childhood, growing up with a family member who suffered from amnesia and clinical depression, and wanting to know more about the effects of disabilities that controlled cognitive thoughts, emotions and behavior.

I will strive to develop very strong work ethnics with a very positive ready to learn attitude, trying my best to propose new ideas and solutions to research questions.



**Dr. Zhenbang Chen** is an Associate Professor in the Department of Biochemistry and Cancer Biology at Meharry Medical College. Dr. Chen had intensive training on prostate cancer research and animal models at Memorial Sloan-Kettering Cancer Center and Beth Israel Deaconess Medical Center/Harvard University. His expertise and contributions on prostate cancer research are demonstrated by his publications in several high-impact journals including *Nature*, *Nature Genetics*, *Cell* and *Science Signaling* etc. He discovered a novel anticancer mechanism- senescence to suppress cancer progression using animal models, which has been recognized as one of the milestones in the field of cancer research. Dr. Chen's current research interests are focusing on understanding molecular mechanisms of the initiation and progression of prostate cancer. Specifically, research projects in Chen Laboratory are to investigate the aberrant alterations of Pten inactivation-caused on prostate cancer progression with application of cultured cells in vitro and animal models in vivo. One research project is to elucidate novel roles of ARF in prostate cancer including Castration Resistant Prostate Cancer, and the results should provide valuable information on

differential functions of tumor suppressors/oncogenes in prostates. Another project is to understand how Skp2 inhibition affects the formation and development of prostate cancer using genetically-engineered mouse models. Dr. Chen has worked on prostate cancer research for 10 years, and has established intensive collaborations with scientists from Vanderbilt University and other institutions in the U.S. Mentees in his laboratory will be fully involved in these research projects with application of the state of art technology in biomedical research. In addition, they will have great opportunities to interact with other trainees and experienced scientists such as postdoctoral researcher, research assistants and PhD students etc. not only in the lab but also in the department.



I come from Buffalo, New York, and have always wanted to be a Pediatrician. I continued my love for science working for the Buffalo Museum of Science and as a participant in the BioMedical STEP program, hosted at the University at Buffalo throughout my high school years.

I am one of three personal assistants to the Fisk University Student Government Association President, an Orientation Leader for incoming students, a member of Women of Perfect, chartered member of the Nashville chapter of the National Negro Council for Women, Student Ambassador, held the position of Miss Big Apple Club, and currently the Junior Class Secretary.

During the summer of 2011 I participated in Meharry Medical College's Health Career Opportunity Program, (HCOP), a Pre-Baccalaureate program, in the effort to educate myself about the chosen medical career path. This summer I hope to gain valuable laboratory skills that will benefit me in future by participating in the Prostate Cancer Research Training Program. I am excited about this opportunity.

**Ms. Ayesha Sease**  
**Biology Junior, Fisk University**

