

AD_____

Award Number: W81XWH-06-1-0266

TITLE: Prostate Cancer Research Training Program

PRINCIPAL INVESTIGATOR: David M. Lubaroff, Ph.D.

CONTRACTING ORGANIZATION: University of Iowa
Iowa City, IA 52242

REPORT DATE: February 2008

TYPE OF REPORT: Annual Summary

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

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE 10-02-2008			2. REPORT TYPE Annual Summary		3. DATES COVERED 11 JAN 2007 - 10 JAN 2008	
4. TITLE AND SUBTITLE Prostate Cancer Research Training Program					5a. CONTRACT NUMBER	
					5b. GRANT NUMBER W81XWH-06-1-0266	
					5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) David M. Lubaroff, Ph.D. Email: david-lubaroff@uiowa.edu					5d. PROJECT NUMBER	
					5e. TASK NUMBER	
					5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) University of Iowa Iowa City, IA 52242					8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012					10. SPONSOR/MONITOR'S ACRONYM(S)	
					11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited						
13. SUPPLEMENTARY NOTES						
14. ABSTRACT The HBCU Summer Research Training Program accepted a total of eight students from Lincoln University for the eight week session in the summer of 2007. Five of the students were supported by this grant and three of the students were supported by the second grant awarded in 2007. At the last minute one student withdrew leaving seven students for the summer. Each student was assigned to a laboratory of a participating mentor and also paired with a member of the mentor's laboratory. This laboratory member assisted with day to day aspects of the research project. During the summer the students worked diligently on their research project, participated in meetings of the mentor's laboratory, attended workshops and seminars associated with our and other summer programs, and attended a special course in prostate cancer. We integrated the Lincoln students into social programs held throughout the campus for summer interns and they attended and participated in the CIC Conference at Purdue University. At the end of the summer session the students presented a poster of the research results from the summer experience. They also presented the results of their research in the fall at Lincoln University and some presented at the DOD's IMPaCT meeting in the Fall of 2007. Of the seven students, three have graduated and four are in their junior year at Lincoln University. Of the three graduates, two are in graduate school and one currently working and applying to graduate schools.						
15. SUBJECT TERMS Summer research; prostate cancer; HBCU institutions						
16. SECURITY CLASSIFICATION OF:				17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON USAMRMC
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U	19b. TELEPHONE NUMBER (include area code)			

Table of Contents

	<u>Page</u>
Introduction.....	4
Body.....	4-6
Key Research Accomplishments.....	6,7
Reportable Outcomes.....	7
Conclusion.....	7
Appendices.....	8,9

Introduction:

The original grant supports five students per summer and a second grant supports three additional students to allow our program to train eight students each year. Although this award was for the initial five students I am submitting the annual report on the entire summer training program that includes both of the grant awards. For the year reported here we had the following faculty participants: David M. Lubaroff, PhD, Principal Investigator, Paul Heidger, PhD, University of Iowa Faculty Advisor, Derek Swinton, PhD, Lincoln University Faculty Advisor, and the following mentors: Elizabeth Chrischilles, PhD, Michael Cohen, MD, Frederick Domann, PhD, Thomas Griffith, PhD, Michael Henry, PhD; Douglas Spitz, PhD, and Nicholas Zavazava, MD.

Body:**Recruitment and Admission:**

Brochures, application forms, and posters were designed and printed and sent to Dr. Swinton at Lincoln and the PI traveled to Lincoln University on January 18, 2007, met with Dr. Swinton, Dr. John Chikwem, and the Chairmen of the Departments of Chemistry and Biology. Dr. Lubaroff presented the summer training program to three groups of students at the beginning of their classes. He also met with interested students in a one-on-one session during the afternoon of January 18. Eleven applications were received and reviewed by the Admissions Committee whose membership consisted of Dr. Lubaroff, Dr. Heidger, Dr. Henry, Dr. Zavazava, and Dr. Swinton. Admission was offered to a total of eight students for the summer of 2007. At the last moment, prior to the beginning of the 2007 session, one student had to drop out for personal reasons, leaving seven students supported by the two awards.

Students Participating in the 2007 Program:

Bisola Awoyemi
Seme Diallo
Caroline Dias
Titilope Idowu
Patrick Ndungu
Elizabeth Okyne
Katrina Proberbs

Advance Preparation and Information Distribution:

Following acceptance of the students into the program we assigned each student a mentor based upon his/her choices listed in their applications. Each mentor then assigned a member of the lab as a "big brother/big sister," a person that partners with the student during the 8 week summer session. The mentor also prepared a portfolio of articles covering the area of research the student would be working on, including published papers by the mentor. These materials were sent to the students in advance of their arrival at the University of Iowa.

A six week course on Prostate Cancer was organized with six faculty assigned to deliver lectures. The following represents the course schedule with lecturers:

Iowa-Lincoln Summer Research Training Program – 2007
Prostate Cancer Course
9:00am – 10:00am
Room 3240 MERF

Lecture	Date	Subject	Lecturer
Week 1	12-Jun	Introduction to cancer	Spitz
Week 2	19-Jun	Basic aspects of prostate cancer	Cohen
Week 3	26-Jun	Clinical treatment of prostate cancer	Vaena
Week 4	3-Jul	Genetics of prostate cancer	Domann
Week 5	10-Jul	Immunotherapy of prostate cancer	Lubaroff
Week 6	17-Jul	Epidemiology of prostate cancer	Dennis

Housing and meal plans were arranged in collaboration with the Iowa Biosciences Advantage Program (IBA). Lincoln students were paired with IBA students in the dormitory. Plans were also formulated to integrate workshops, lectures, and social events with other programs dedicated to the training of minority students, such as the Iowa Alliance for Graduate Education and Professoriate (AGEP), CIC Iowa Summer Research Opportunities Program (SROP), and Iowa Biosciences Advantage (IBA) Program.

Program web sites:

IBA: <http://www.uiowa.edu/iba>

AGEP: <http://www.agep.iastate.edu>

SROP: <http://www.grad.uiowa.edu/students/SROP>

The Summer Program:

A welcoming summer picnic was held on the day of the student's arrival in Iowa City in conjunction with the other summer programs at the University of Iowa. The following day the students met with the PI, administrator, mentors, and big brothers/sisters for an orientation and then taken to the laboratory of their mentors to begin the summer research training program.

During the 8 week session each student worked diligently with his/her mentor and lab partner on the assigned research project. Each student had an independent project. They attended seminars, workshops, lab meetings, journal clubs and the weekly lectures in the program's prostate cancer course (see schedule above). During the seventh week the PI met individually with each student to evaluate his/her summer experience. The unanimous opinion was that the program was a success. The students indicated that they learned much about research, about prostate cancer, and about the advantages of a research career. At the end of the summer session each student presented their research as part of a poster session held during an afternoon of the last week. In addition to the poster presentations each student gave an oral summary of their research project to the mentors, big brothers/sisters, and other summer students. A page of photographs taken during the Iowa poster session is included in this annual report. In addition to the mentoring the students received from their research lab and the PI, they received career counseling. We discussed the options for each of them based upon their experience and their desire for the type of future they envisioned for themselves. Among the topics discussed was graduate school versus medical school, their ultimate goals of research, patient care, and/or teaching.

All of the students attended the CIC Conference held July 27-29, 2007 at Purdue University, West Lafayette, IN. Each presented a poster of their research and participated in roundtable discussions with students from other CIC-associated institutions. Dr. Heidger accompanied the students on the trip.

Follow-Up:

We made frequent contact with all of the students after their departure from the University of Iowa. The mentors, faculty advisors (Heidger and Swinton), and mentors, all had contact with the students since the end of the 2006 summer session. Many of the mentors were asked to write letters of reference for the students' applications to graduate schools. The following table reports on the current status of the 2006 and 2007 summer students.

Lincoln Student Follow-Up				
Student	Year	Lab	Current School	Program
Oluwaseun Adekanye	2006	Griffith	Penn State	medical School
Shaynah Browne	2006	Lubaroff	U. Mass	graduate
Nikesha Haynes	2006	Henry	U. Rochester	graduate
Shivaughn Johnson	2006	Field	Ross University Medical School	medical school
Briquel Sherman	2006	Zavazava	University of Michigan	graduate
Shaan Spence	2006	Domann	U. South Florida	graduate
Bisola Awoyemi	2007	Henry	UDC	graduate
Seme Diallo	2007	Zavazava	Lincoln	senior
Caroline Dias	2007	Chrischilles	working	working & applying to grad schools
Titilope Idowu	2007	Domann	Lincoln	senior
Patrick Ndungu	2007	Lubaroff	University of Pennsylvania	graduate
Elizabeth Okyne	2007	Spitz	Lincoln	senior
Katrina Proberbs	2007	Lutgendorf	Lincoln	senior

As is evident from the table, of the students that have graduated from Lincoln, eight of the nine (89%) have been accepted to graduate or medical schools. This is an amazing statistic. Of the students still enrolled at Lincoln all have applied for other summer research programs for the summer of 2008.

Key Research Accomplishments

Each of the students worked on research projects that were part of an overall program within the laboratory of their mentors. As such, it is difficult to identify key research accomplishments for each student research project. Continuation of the research program by each mentor will certainly produce important research findings, aided in part by the summer research of the Lincoln University students. What is key is the mentoring and counseling of the students to aid in their future as scientists in the area of prostate cancer research. The high percentage of the students that are graduate programs or medical schools is an outstanding accomplishment as these future scientists will most certainly provide key research accomplishments in the years to come.

Four of the students from 2006 and 2007 participated in the first Department of Defense's Innovative Minds in Prostate Cancer today (IMPACT), held September 7-9, 2007 in Atlanta, GA. The students were Shaynah Browne (2006), Nikesha Haynes (2006), Bisola Awoyemi (2007),

and Caroline Dias (2007). All of the students had presentations, either poster or oral posium presentations.

Reportable Outcomes:

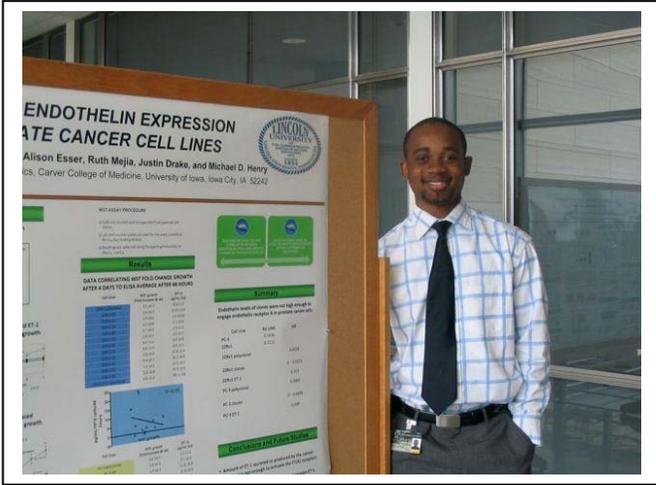
Although the students have not produced any publications from there 8 week research program, they have reported their findings to the University of Iowa faculty, to the faculty and students at Lincoln University, at national competitions and conferences, and the aforementioned IMPaCT conference..

Conclusion

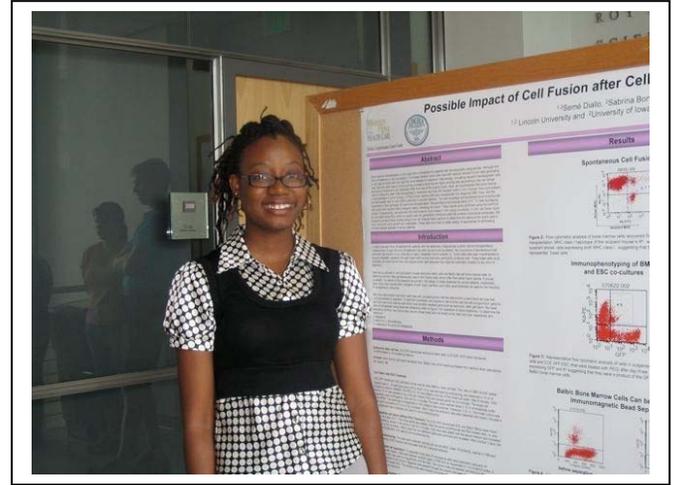
The first two years of this award were highly successful as evidenced by the amount of work accomplished by each student and by their motivation to continue in a science career. The PI applied, and received funding, for a second HBCU training grant that will enable us to accept additional students for the next 3 years, thus increasing the number of African American scientists in the area of prostate cancer.

Appendices: Attached photographs of the 2007 students during their poster session.

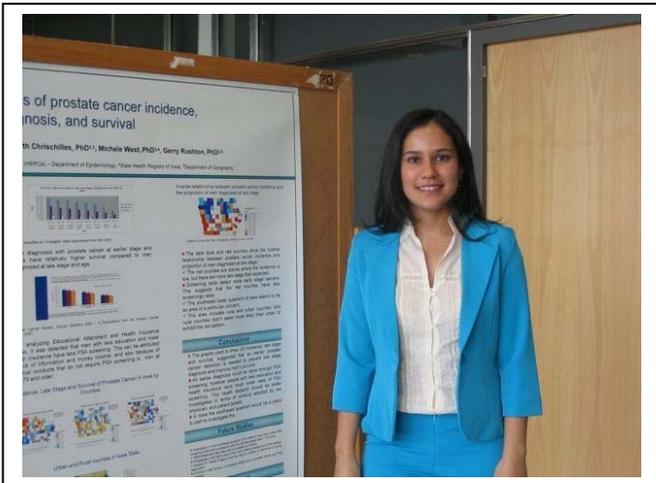
Appendix
2008 Iowa-Lincoln Summer Research Training Program
Final Poster Session



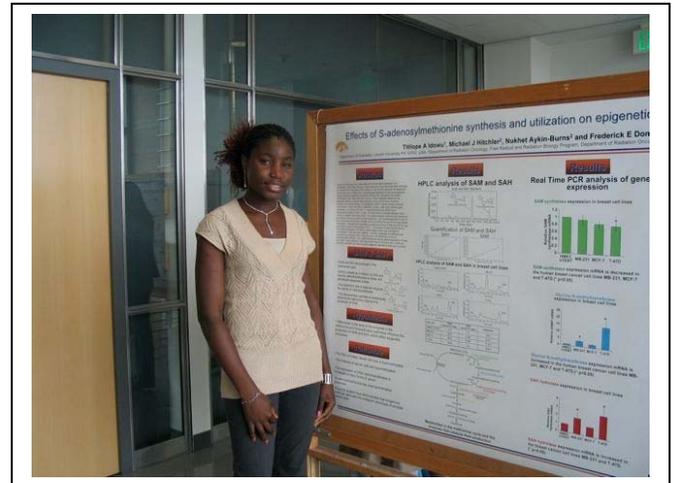
Bisola Awoyemi



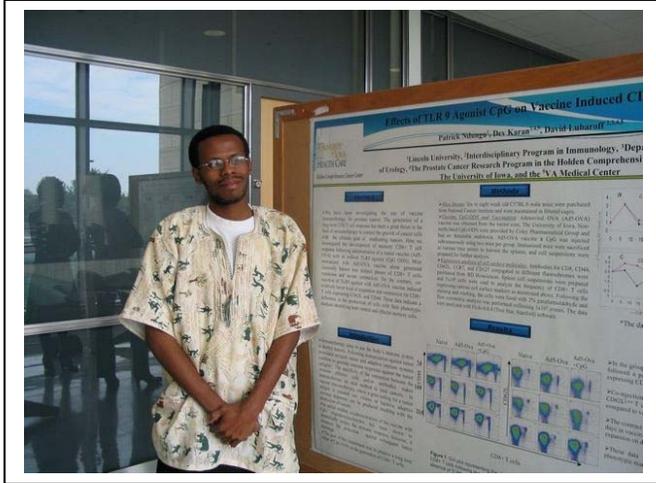
Seme Diallo



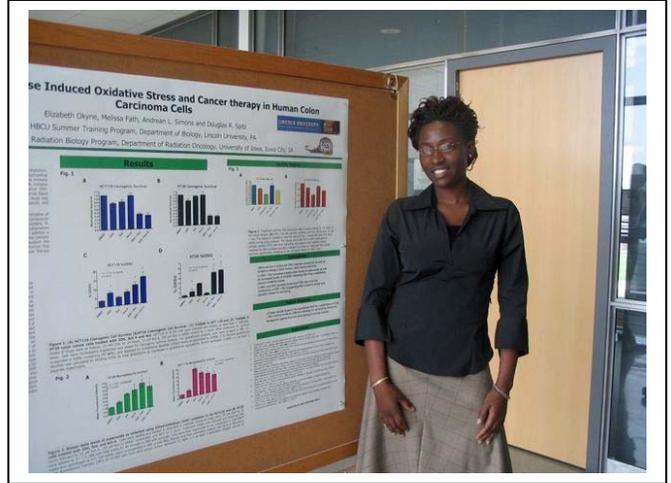
Caroline Dias



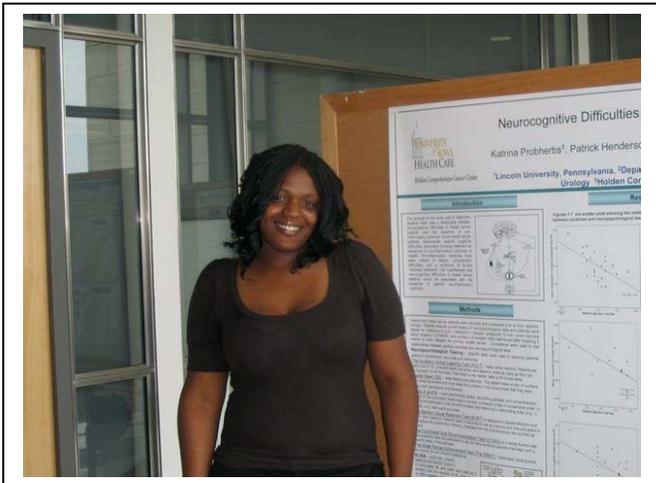
Titilope Idowu



Patrick Ndungu



Elizabeth Okyne



Katrina Proberbs