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14. ABSTRACT The HBCU Summer Research Training Program accepted a total of 21 students from Lincoln University for the eight week session during the summers of 2006-2008. Fifteen of the students were supported by this grant and six of the students were supported by the second grant awarded in 2007. 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 Conferences at the University of Illinois (2006), Purdue University (2007), and Michigan State University (2008). At the end of the summer sessions 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 21 students, nine have graduated and the remainder are continuing their undergraduate education at Lincoln University. Of the nine graduates, two are in medical school, seven are in graduate school, and one currently working and applying to graduate schools.					
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**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 first two years 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. In year three of the award we added additional mentors and lost one mentor. Dr. Michael Cohen removed himself from the program due to a downsizing of his laboratory. We added Jackie Bickenbach, PhD, Elizabeth Field, MD, and Dr. Aliasger Salem.

**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 in mid-January of each year, 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. 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 5 students in 2006, and eight students in each of the summers of 2007 and 2008. 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 Summer Research Training Program Program:**

2006	Oluwaseun Adekanye
	Shaynah Browne
	Nikesha Haynes
	Shivaughn Johnson
	Briquel Sherman
	Shann Spence
2007	Bisola Awoyemi
	Seme Diallo
	Caroline Dias
	Titilope Idowu
	Patrick Ndungu
	Elizabeth Okyne
	Katrina Probherbs
2008	Bukola Fatunmbi
	Katherine Foster
	Theon Francis
	Michelle Gray
	Julia Greenfield
	Gladys Murage
	Britanny Stokes
	Stacy-Ann Wright

**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 for the most recent year of 2008:

**Iowa-Lincoln Summer Research Training Program – 2008**  
**Prostate Cancer Course**  
**9:00am – 10:00am**  
**Room 3240 MERF**

<b>Lecture</b>	<b>Date</b>	<b>Subject</b>	<b>Lecturer</b>
Week 1	June 26	Introduction to cancer	Spitz
Week 2	July 1	Basic aspects of prostate cancer	Dahmouch
Week 3	July 8	Genetics of prostate cancer	Domann
Week 4	July 15	Epidemiology of prostate cancer	Dennis
Week 5	July 22	Clinical treatment of prostate cancer	Vaena
Week 6	July 28	Immunotherapy of prostate cancer	Lubaroff

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 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 Conferences held July 21-23, 2006 at the University of Illinois, Champaign-Urbana, IL, July 27-29, 2007 at Purdue University, West Lafayette, IN, and July 25-27, 2008 at Michigan State University, East Lansing, MI. 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 trips.

### 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 three summer sessions. 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 through 2008 summer students.

<b>Lincoln Student Follow-Up</b>				
<b>Name</b>	<b>Year</b>	<b>Lab</b>	<b>School</b>	<b>Program or Current Year at Lincoln</b>
Oluwaseun Adekanye	2006	Griffith	Penn State	medical School
Shaynah Browne	2006	Lubaroff	U. Mass	graduate school
Nikesha Haynes	2006	Henry	U. Rochester	graduate school
Shivaughn Johnson	2006	Field	Ross University Medical School	medical school
Briquel Sherman	2006	Zavazava	University of Michigan	graduate school
Shaan Spence	2006	Domann	U. South Florida	graduate school
			Univ. of the District of Columbia	
Bisola Awoyemi	2007	Henry	Columbia	graduate school
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 school
Elizabeth Okyne	2007	Spitz	Lincoln	senior
Katrina Proberbs	2007	Lutgendorf	Lincoln	senior
Bukola Fatunmbi	2008	Salem	Lincoln	senior
Katherine Foster	2008	Spitz	Lincoln	junior
Theon Francis	2008	Field	Lincoln	senior
Michelle Gray	2008	Lubaroff	Lincoln	senior
Julia Greenfield	2008	Henry	Lincoln	junior
Gladys Murage	2008	Domann	Lincoln	senior
Brittany Stokes	2008	Griffith	Lincoln	senior
Stacy-Ann Wright	2008	Bickenbach	Lincoln	sophomore

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.

### **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. One of the students, Seme Diallo (2007) attended the 2008 Annual Biomedical Research Conference for Minority Students (ABRCMS) and present the results of her summer research project.

### **Reportable Outcomes:**

Although the students have not produced any publications from there 8 week research programs, 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**

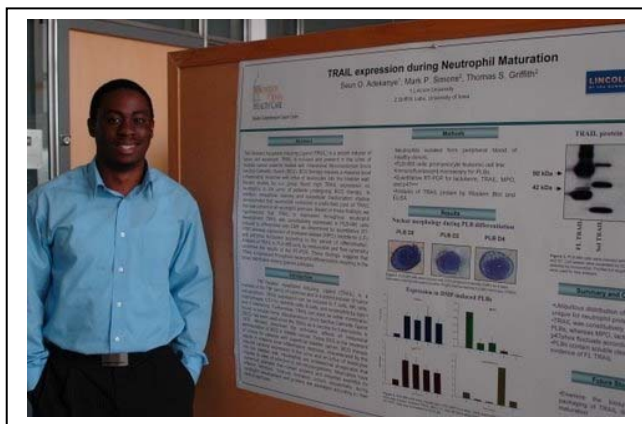
The three years of this award were highly successful as evidenced by the amount of work accomplished by each student and by their motivation to continue in a science career. The PI applied, and received funding, for a second HBCU training grant that will enable us to accept additional students, thus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

**Appendices:** Attached photographs of the students during their poster sessions.

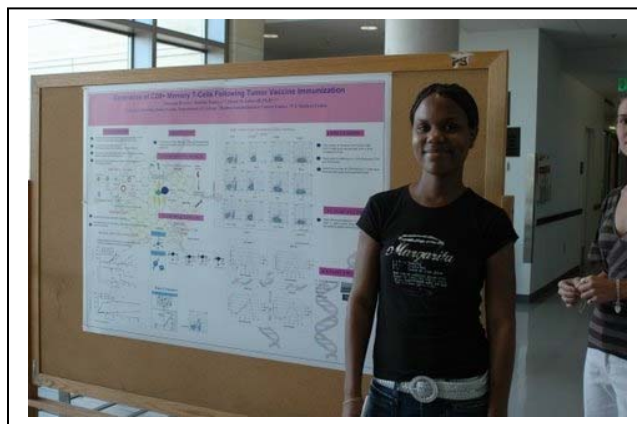
## Appendix

### Iowa/Lincoln Summer Research Training Program – 2006

### Poster Session



Aluwaseun Adekanye



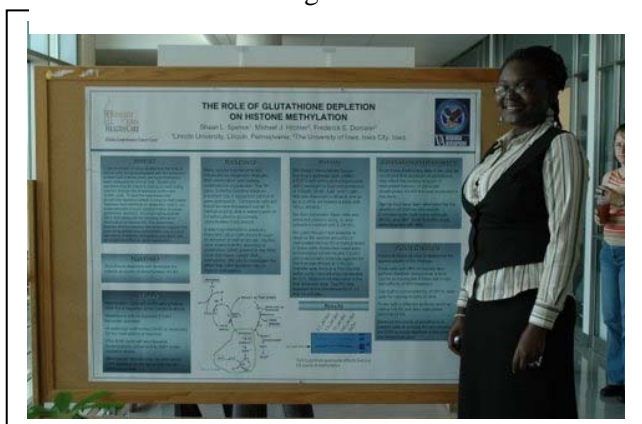
Shaynah Browne



Shivaughn Johnson



Briquel Sherman

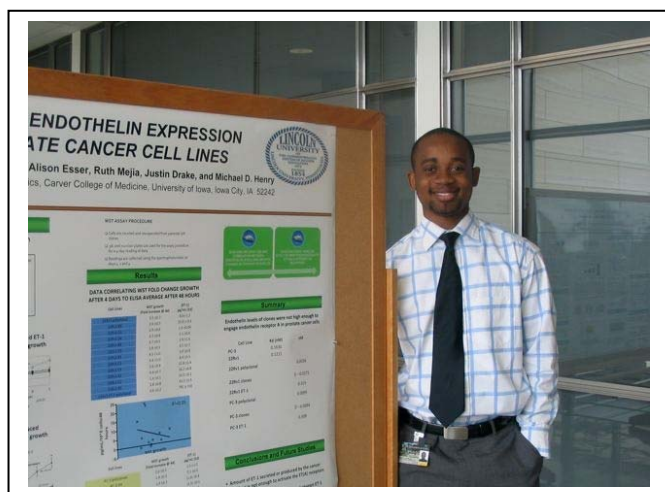


Shaan Spence

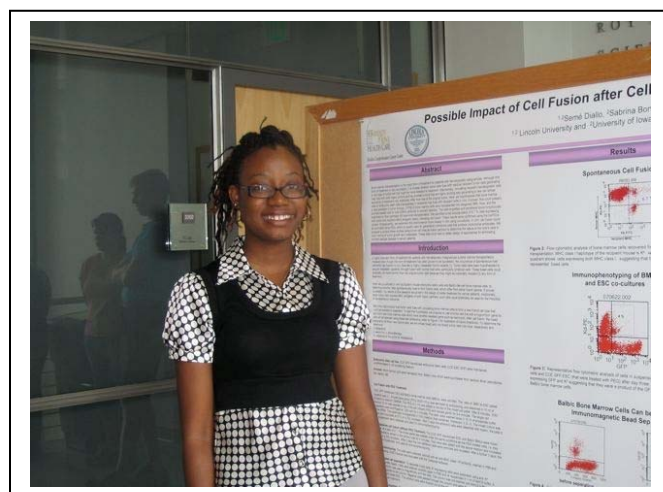
Not pictured – Nikesha Haynes



## Appendix Iowa/Lincoln Summer Research Training Program - 2007 Poster Session



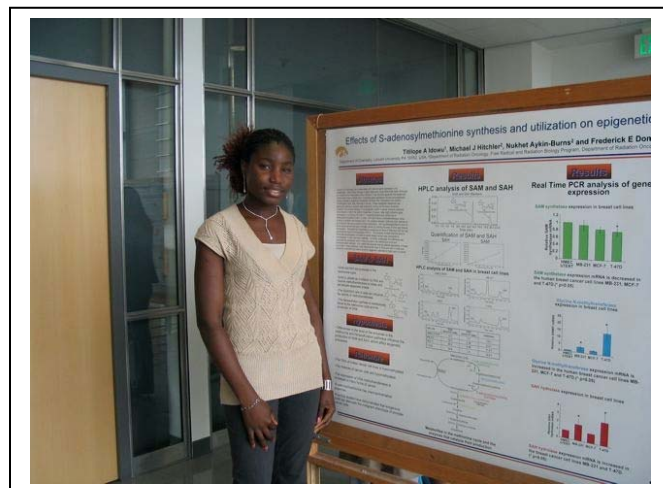
Bisola Awoyemi



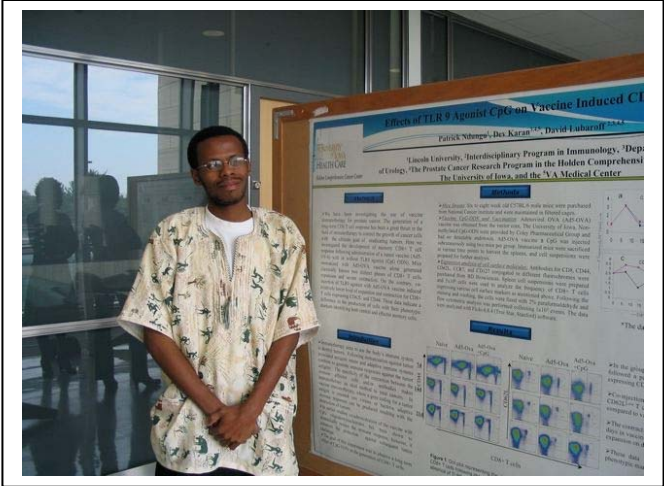
Seme Diallo



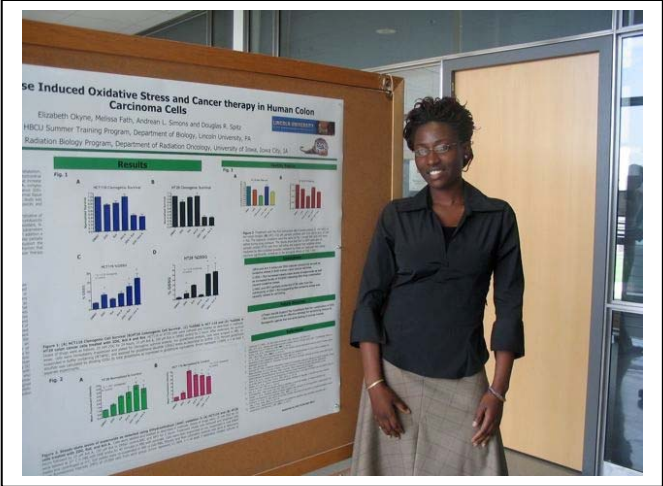
Caroline Dias



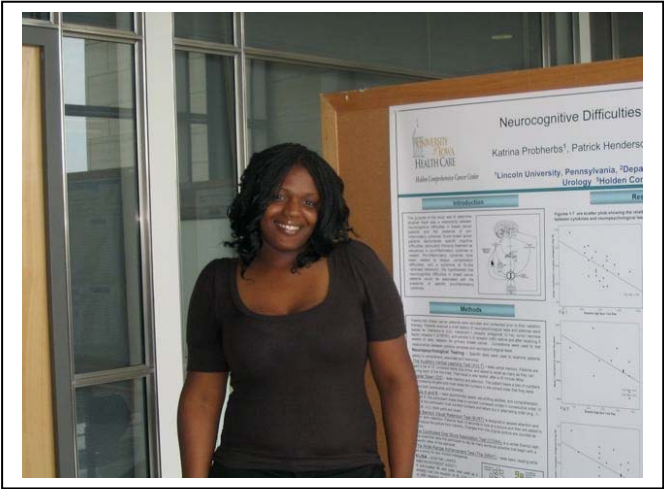
Titilope Idowu



Patrick Ndungu



Elizabeth Okyne



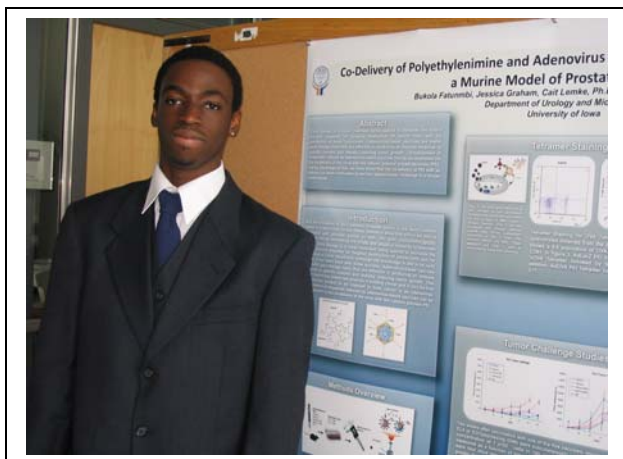
Katrina Proberbs



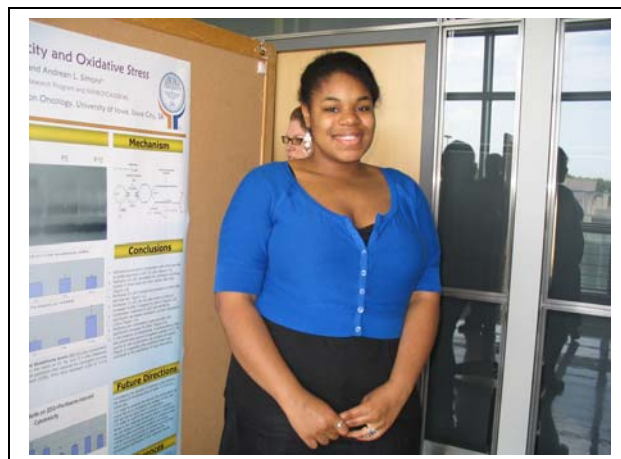
# Iowa/Lincoln Summer Research Training Program – 2008

## Poster Session

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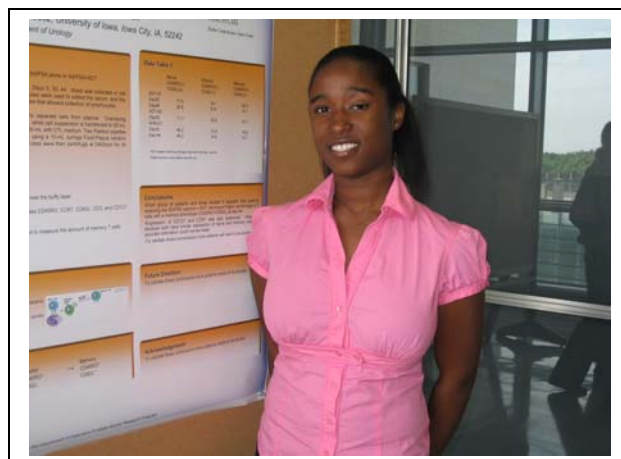
Bukola Fatunmbi



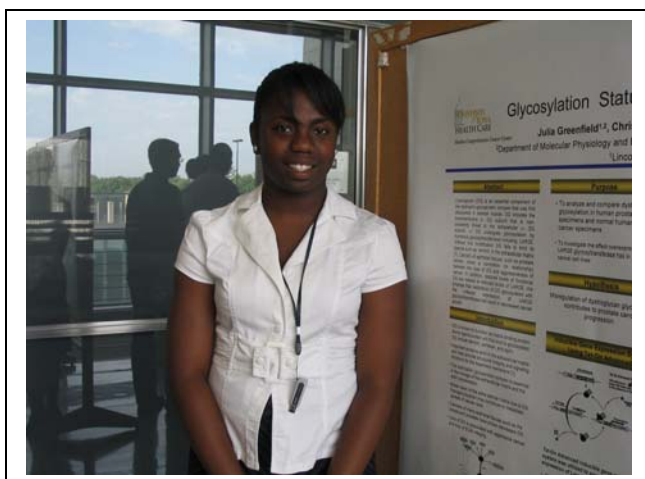
Katherine Foster



Theon Francis



Michelle Gray



Julia Greenfield



Gladys Murage



Brittany Stokes



Stacy-Ann Wright