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14. ABSTRACT
The goal of the "Mississippi prostate cancer HBCU Undergraduate Research Training Program" was to promote interest in careers in PCa research and care among undergraduate students from Tougaloo College (TC) and Jackson State University (JSU) at the University of Mississippi Medical Center (UMMC)-Cancer Institute (CI). During the execution of this award, 14 undergraduate scholars from TC and JSU, gained experience in performing PCa research at UMMC-CI. Scholars of this program have been accepted into graduate studies programs focused in cancer biology (4); others joined other higher education in Health Sciences related programs (3); some have been hired as employees in careers related to health care (3) and some of them are currently pursuing graduation (4). Fifty one (51) meeting presentations in the poster or oral format included work related to internships during the current report period; trainees received numerous (18) awards; manuscripts published (1) and (4) in preparation include trainees as coauthors; and 3 PCa Research Mini Symposiums have been organized. Research projects are leading to development of novel effective treatments and addressing mechanisms of resistance for men with high-risk or metastatic PCa. Likewise, these projects will eventually help distinguishing aggressive from indolent disease in men newly diagnosed with PCa. This Program has provided minority scholars with interests in PCa research and healthcare.

15. SUBJECT TERMS
UMMC-HBCU, Prostate Cancer, Training Grant, University of Mississippi Medical Center, Cancer Institute, Tougaloo College, Jackson State University, CDMRP, PCRP, research, care

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1. Introduction

Mississippi has the second highest rate of PCa death in the country and the fourth highest incidence rate. Factors such as increased risk for African-Americans, obesity and medical distrust contribute to high rates of PCa in Mississippi. The scarcity of minority physicians and scientists is a major factor in perpetuating distrust in medicine and science among minority communities. Because of these reasons the scope of our program was to increase the number of HBCU scientists and physicians who are trained as PCa researchers. The subject was to train undergraduate students from two Historically Black Colleges and Universities, Tougaloo College (TC) and Jackson State University (JSU), so they could gain experience in performing prostate cancer (PCa) research at the University of Mississippi Medical Center (UMMC) Cancer Institute (CI). Trainees (N=14) participated in a 10-week comprehensive training program in PCa research and care. Interns performed hands on PCa research, attended regular hosting lab meetings, weekly one-on-one meetings with their mentors, attended UMMC-CI's weekly seminar series, participated in a lecture program including PCa-related lectures, shadowed a physician to expose them to experiences related to PCa clinical practice, participated in a PCa Research Symposium (three of them were organized between 2014-1016), attended seminar series about the research programs at UMMC, postgraduate studies alternatives, graduate school application process, and were provided opportunities in social settings to improve their networking and communication skills. Interns also prepared a final written report. Diverse ways of tacking interns have been utilized in order to contact them, update their biographical and training information, as well as their accomplishments, awards, interest and achievements related to their approach to academic career (i.e., enter graduate school, medical school or other related health-related professions contributing to PCa research and care). The majority of our trainees have continued research or care –related careers, including those related to cancer. We are hopeful, we have established a long-term partnership between TC, JSU and UMMC-CI. Our trainees are on track to become top-caliber minority scientists and physicians with a specific interest in PCa research, prevention, diagnosis and care.

2. Keywords

UMMC-HBCU, Prostate Cancer, Training Grant, University of Mississippi Medical Center, Cancer Institute, Tougaloo College, Jackson State University, CDMRP, PCRP, research, care, aggressive, indolent, disease, newly diagnosed.

3. Accomplishments

Major goals of the project [as stated in the approved* Statement of Work (*SOW)]:

Specific Aim 1: To, during a 2-year period, recruit 6 undergraduate trainees per year from TC and JSU.

Specific Aim 2: To provide the mentees a comprehensive training curriculum in PCa research at UMMC-CI.

Specific Aim 3: To track and coach trainees on their progress towards become biomedical Prostate Cancer researchers

What was accomplished under these goals:

Upon completion of this project (8/2014 – 8/2017), we have trained 14 undergraduate students from TC and JSU. There were no technical or unexpected difficulties encountered and/or any deviations from the original SOW. Per Instruction, our training and research accomplishments following each task outlined in the approved SOW are listed as follows:

Specific Aim 1: To, during a 2-year period, recruit 6 undergraduate trainees per year from TC and JSU. Year 1, months 1-3; Year 2, months 13-15 (completed)

Selection process: The applicant pool included all sophomores and juniors enrolled in a Major in the life sciences (biology, biochemistry, chemistry, biotechnology, etc.) at TC or JSU. We also included in the selection pool seniors based on their commitment to go to Graduate School (applying or accepted in a graduate program at the time of application to our program). Our strategy of advertisement included online advertisement in the research-related section and Summer Internships and Outreach Programs in the HBCUs, UMMC-CI, UMMC-discovery U Program, and UMMC-School of Graduate Studies in the Health Sciences webpages. We also developed a webpage (http://www.umc.edu/researchtraining/). This resource was particularly successful in getting trainees since includes information about eligibility requirements, program components, summer research internship, housing assistance, application packet, and contact information, list of mentors, and news **(Appendix #1: Training Program Webpage)**. In addition, Flyers were placed in the two colleges and at the host institution **(Appendix #2: Program flyers)**. The selection process was initiated 60 days prior to the beginning of the summer training course.

The following table refer to demographics aspects related to the total number of applicants:

Applicant numbers	2014	2015	2016	TOTAL
JSU	15	22	7	44
TC	8	10	4	22
Gender (overall)				
Female	17	23	9	49
Male	6	9	2	17
Gender (JSU)				
Female	11	15	2	28

Male	4	7	2	13
Gender (TC)				
Female	6	8	7	21
Male	2	2	0	4

It is also worth noting that independent of the school, females consistently leaded the number of applicants to our program. Overall, for the extension of the program, females represented 74.2% of the pool of applicants. Males represented 25.8% of the pool of applicants. The distribution was similar at the level of individual schools (note tables above). In future training efforts, we suggest to specially promote inclusion of males.

A question related to the academic status of applicants applying to our program is of great importance to assess the nature of the pool and its distinct component when analyzing per school.

The following tables represent the average GPA for the whole pool as well as per each individual school:

GPA average	2014	2015	2016	Overall GPA Average
JSU	3.5	3.5	3.6	3.5
TC	3.4	3.5	3.4	3.4

From the GPA results, a good representation of academic performance, we can propose that the application pool remained homogeneous between schools. This statement however, needs further validation since the standards between schools for evaluation have not been normalized at the present.

Following the selection process, trainees were selected. Individual digitalized application packages and a well-defined set of scoring criteria was distributed to a set of five raters. Those included PI, member of Program Advisory Board, a research mentor, HBCU faculty advisors, and Program Coordinator. Applicants were ranked by highest to lowest based on the GPA, Personal statement and Letters of reference. Selected applicants are summarized in **Table 1: Students, mentors, and Research Projects**.

Match the student fellows with their research mentors at UMMC-CI. Year 1, months 4-5; Year 2, months 16-17 (completed)

As planned, trainees were matched to mentors based on the mentee's research interests and following an interview between the mentee and potential mentor. Mentor assignations were completed 30 days prior to the initiation of the summer program. Use of the web-based resource (http://www.umc.edu/researchtraining/) allowed mentees to identify mentors based on research interests. Typically, the trainees selected three mentors and ranked them by order of preference. Interviews followed (including the presence of the Program Director) and a decision about the selected mentor was taken consulting the option of the mentee and prospective mentors.

Specific Aim 2: To provide the mentees a comprehensive training curriculum in Prostate Cancer research at UMMC-CI (completed)

Summer course:

The trainees participated in a 10-week comprehensive training program in PCa research and care. As outlined **(Appendix #3: Research Training Program)**, the Course Program was completed as anticipated.

The following description refers to landmarks achieved during the Summer Training Course:

PCa-specific lecture program: Included lectures were focused on Basic Cancer Biology; Cancer Pathology Pharmacology; Clinical science; Population Science; and Careers in PCa Research and Care.

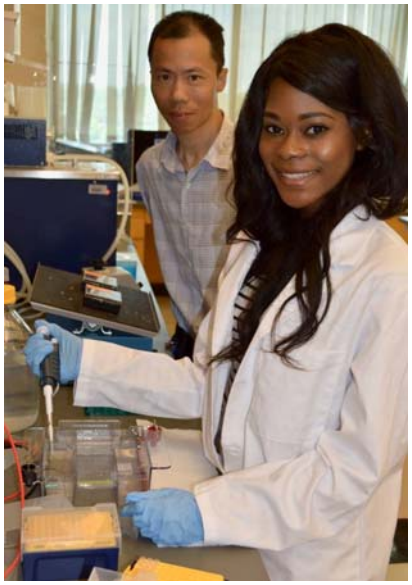
Summer research project: The mentees were associated to a primary mentor. They developed their research project under direct supervision of a graduate student or postdoc. Details about mentors and selected mentees is summarized in **Table 1: Students, mentors, and Research Projects**.

Students attended regular hosting lab meetings, and met weekly with their mentors. These one-on-one meetings were highly valuable to discuss the progress of the research projects. For the inaugural course, once a week, the students visited another lab involved in PCa research; in these occasions they interacted with other PIs and lab personnel. It was intended that this activity would give the students a broader vision of the PCa research done at the Cancer Institute. This activity was, however discontinued due to low scores from trainees in the end-of-the-course survey.

The following pictures shows aspects of the wet lab centric summer research program:



The Summer Training Program was centered on a mentored hands-on a research intensive project (Diva Whalen, Class of 2014 at work with her mentor Dr. Anait Levenson, M.D., Ph.D.)





Summer students perform research activities guided by UMMC Cancer Institute Faculty, post-doctoral fellows and graduate students (Class of 2016 - Courtney Mangum with her mentor Dr. Keli Xu, Ph.D. on the left and Ornella Amoah with graduate student Nasir Butt, M.D.)

Shadowing: To expose mentees to experiences related to PCa clinical practice, they shadowed clinicians. See **Appendix #3: Research Training Program** for list of clinical mentors involved in the shadowing activities. This activity, occurred once a week (between weeks 4-6) and included touring to Urology, Hematology-Oncology, and Radiation Oncology facilities. Shadowing exposed the mentees to the challenges related to research and care of PCa patients.



Shadowing exposed trainees to the challenges of their research projects for patients care. (Brittany Martin - Class of 2014 and Dr. Christopher Lahr, M.D., UMMC Cancer Surgeon.)



Scenarios for multi-disciplinary patient assessment were presented to students during shadowing activities (Mentees attend a tumor teleconference focused on Vice-President Biden "Cancer Moonshot Initiative")



During shadowing activity, trainees attend a tumor board (Class of 2014)

Table 1: Students, mentors, and Research Projects								
Name	**Year**	**School**	**Classification**	**Major**	**Minor**	**GPA**	**Mentor**	**Project title**
Anthony Keyes	2014	JSU	Sophomore	Chemistry	Mathematics	4	Drazen Raucher	Thermal Manipulation of the Elastin-Like-Polypeptide P21-E1-Bac Increases the Therapeutic Peptide's Potency Compared to the Parent Compound *in vivo*
Ansley Scott	2014	TC	Senior	Biology		3.3	Yin Yuan Mo	Creating long non-codingRNA Knockouts to Determine Function in Relation to Prostate Cancer
Brittany Martin	2014	JSU	Junior	Biology		3.29	Christian Gomez	The Role of Hepatoma Up-Regulated Protein (HURP) in resistance to prostate cancer treatment
Tatyana Givens	2014	JSU	Sophomore	Biology		3.7	Chindo Hicks	Molecular Analysis of miRNA and mRNA Signatures in Prostate Cancer in African American and Caucasian Men
Joshua Agee	2014	TC	Junior	Biology	Spanish	3.39	Xinchun Zhou	C-terminal of group 3 POTES correlates with the Progression of Prostate Cancer
Diva Whalen	2014	TC	Junior	Biology		3.4	Anait Levenson	The Effects of Synthetic Stilbenes on Metastasis Associated Protein 1 (MTA1) Levels In Prostate Cancer Cells
Adesuwa Ekunwe	2015	JSU	Sophomore	Chemistry-Pre med		4	Anait Levenson	Prostate-Specific MTA1 Transgenic Mice Model
Angel Garcia	2015	TC	Sophomore	Biology		3.9	Christian Gomez	MICA (MHC class I polypeptide-related sequence A) as a Factor of Immunoevasion in Prostate Cancer
Charles Phillips	2015	TC	Senior	Biology		3.42	Yin Yuan Mo	Long non-coding RNAs as potential diagnostic/prognostic markers in prostate cancers
Deion Fields	2015	JSU	Junior	Biology		3.84	Keli Xu	Effects of NOTCH3 in Aggressiveness of Prostate Cancer
Jamal Keyes	2015	JSU	Sophomore	Chemistry	Biology	4	Drazen Raucher	Testing the Anti-Proliferative Effects of Thermally Responsive Elastin-like Polypeptides on PC-3 mm and DU-145 Prostate Cancer Cell Lines
Timera Brown	2015	TC	Sophomore	Biology		4	Xinchun Zhou	Accumulation of Cholesteryl Esters is associated with the Progression of Prostate Cancer
Courtney Mangum	2016	TC	Junior	Biology		3.77	Keli Xu	Identifying Progression of Aggressive Prostate Cancer Originating from Lunatic Fringe/Notch-Regulated Mice Models
Ornella Amoah	2016	JSU	Sophomore	Chemistry		3.79	Christian Gomez	Effects of Hypoxia on the Aggressiveness of PCa

End of the Summer PCa Research Symposium: This activity became a keystone of our program. The program attracted the attention of the UMMC community at large, along with that from local academic institutions.

A large number of attendants registered for the conferences (**Appendix #4: Prostate Cancer Mini Symposium Posters; Appendix #5: Prostate Cancer Mini Symposium Agendas; Appendix #6: Prostate Cancer Mini Symposium Sign in Sheets**). Speakers (**Appendix #5, Prostate Cancer Mini Symposium Agendas**) included invited keynote speakers, UMMC, TC, and JSU faculty, postdoctoral fellows, graduate students, current and former trainees. The Research Mini Symposium represented a venue for the trainees to present their research project, increase their knowledge about the different research aspects of PCa, and engage themselves in productive networking activities with seasoned PCa researchers, academic leaders and PCa community advocates, among others as is exhibited in **Appendix #7: Speakers pictures.**

Summer Undergraduate Research Experience (SURE): To maximize the mentees' summer experience, our Program has been integrated with the SURE program. This initiative oversees and promotes undergraduate outreach summer activities in biomedical research through the UMMC School of Graduate Studies in the Health Sciences. Mentees from our program interacted with top students from around the state and the country, attended to weekly seminar series **(Appendix #8: Summer Students Activities Related to SURE Program)**. Students learned about the research programs at UMMC, postgraduate studies alternatives, and graduate school application process. They also were provided numerous opportunities in social settings to improve their networking and communication skills **(Appendix #9: SURE Social Activities Program).** They presented their research projects in the oral and poster format **(Appendix #10: Summer Undergraduate Research Symposium Program)**. Highlighted in the program are our students' names.

What opportunities for training and professional development did the project provide?

Preparation of reportable products (i.e., scientific abstracts and manuscripts) based on the trainees' research:

Trainees have worked and continue working in close contact with their mentors in summarizing their findings.

Final report: At the end of the Summer Training Course mentees prepared a final report (**Appendix #11: Final papers**). The 1-page document was structured as a scientific conference abstract. Early on, mentors and mentees were instructed to refer to a very specific format for elaboration of the document. Format requirements included extension (1-page), document type (Word file), Font (Times New Roman), Font size (12 points), Space (single), Margins (1.25"). Structure was also specified (Title, Authors, Affiliations, Body: Including introduction, main objective or hypothesis, materials and methods, main results, discussion and future directions), and Funding sources: (i.e., grant/s from PI, DoD: W81XWH-14-1-0151).

Student presentations: Interns presented their research in the poster and/or oral format. So far 6 (six) meeting presentations in the poster or oral format included work related to our 14 trainees.

Trainees presented their work in local meetings, at 2014-2016 UMMC PCa Research Mini Symposiums **(Appendix #5: Prostate Cancer Mini Symposium Agendas; and Appendix #7: Speakers pictures)**, 2014-2016 Summer Undergraduate Research Symposiums **(Appendix #10: Summer Research Symposium Program)**, and TC Research Day **(Appendix #12: Tougaloo College Research Day Featuring our Trainees)**.

Manuscripts in preparation (4): Anthony Keyes, the process of writing a publication from the work he did during the summer of 2014 (Class of 2014). Joshua Agee (Class of 2014) and Timera Brown (Class of 2015) will be coauthors in a manuscript from Drs. Mao and Zhou (mentors). Angel Garcia (Class of 2015) will be coauthor in an article from Dr. Gomez (PI) lab. Adesuwa Ekunwe (Class of 2015) is actively working with Dr. Anait Levenson in the preparation of a manuscript including her as coauthor. In recognition of the relevance of publications for the success of this program, the leadership continue actively engaging mentors and mentees in the preparation of manuscripts. For this purpose, active mentee-mentor communication modalities have been implemented. To stimulate students' continued work, they have been offered part time opportunities in the host laboratories at UMMC. To formalize this process, they were offered an academic credit-conducing Independent Study Course co-mentored by the research mentor at UMMC-CI and the faculty advisor at the HBCU.

Specific Aim 3: To track and coach trainees on their progress towards become biomedical Prostate Cancer researchers

There are different modalities to track trainees and support them. Some of them are based at the HBCUs and others are based at UMMC. The mentors and mentees maintain periodical communication. Additional constant communication occurs between Undergraduate Faculty Advisors at HBCU and mentees for evaluating academic performance and willingness to pursue graduate studies. As indicated above, the Program Director has worked closely with mentors and HBCU advisors to work on modalities to sustain communication with the mentees and achievement of program success indicators. Faculty advisors at the HBCUs have worked with the trainees in promoting their academic progress preparing them for graduate school.

To exemplify our progress on supporting our fourteen (14) trainees in their path to pursuing PCa careers, summarized in **Table 2: Trainees Accomplishments**, we exhibit some relevant landmarks:

Our Trainees have received numerous (18) awards. Summarized in **Appendix #13: Trainees Awards.** Class of 2014- Ansley Scott: Biochemistry research internship at the University of Arkansas for Medical Sciences; Second place winner at the Eleventh International Symposium on Recent Advances in Environmental Health Research and Thirteenth International Symposium on Metal Ions in Biology and Medicine; Fellowship in the Louis Stokes Mississippi Alliance for Minority (LSMAMP) Bridge to the Doctorate Program and join Cohort 11. Anthony Keyes: Poster presentation award at ABRCMS 2015 in Seattle, WA; Research Experience for Undergraduates Summer Program at University of Illinois at Urbana-Champaign (Summer 2015); 2016 iREU (international Research Experiences for Undergraduates) at University of Bordeaux, France.

Brittany Martin: Fellowship STaRS Summer Research Program, Graduate Medical Sciences, Boston University School of Medicine; Travel award ($500) to attend the Dr. Sidney A. McNairy, Jr. Student Symposium 2015. Diva Whalen: TC Student Government President, 1st place Oral Presentation 2014 TC Research Day, and Travel Award ($2,400) UMMC-HBCU PCa Training Program. Class of 2015- Adesuwa Ekunwe: 2017 Naval Research Laboratory Summer Research for HBCU/Minority Institutions. Angel Garcia: NSD Research Symposium 2015 second place poster presentation award; 13th Annual Mississippi College Undergraduate Research Symposium, Tougaloo College second place poster award; iSEED Summer Research Experience at the University at Buffalo. Jamal Keyes: 2016 Summer Research experience for undergraduates, RISE (Research in Science and Engineering) at Rutgers. Timera Brown: 2016 Research experience for undergraduates at Vanderbilt Institute for Nanoscale Science and Engineering; 2017 Strong Children's Research Center's Summer Program at University of Rochester Medical Center. Class 2016- Ornella Amoah: Internship as manufacturing science intern at Lilly Company.

Two (2) trainees are pursuing graduate studies in cancer biology: Diva Whalen (Class of 2014) is currently at her third year at Meharry Medical College to attain a Ph.D, researching breast cancer. Charles Phillips (Class of 2015) started his second year at the School of Graduate Studies in the Health Sciences, Graduate Program in Pathology, UMMC to attain a Ph.D. **(Appendix #14: Postgraduate Education)**.

Six (6) trainees joined other higher education in Health Sciences related programs: Class of 2014 - Ansley Scoot: accepted at the University of Arkansas for Medical Sciences College of Medicine. Anthony Keyes: accepted to the Chemistry Ph.D. Program of the College of Natural Sciences and Mathematics at the University of Houston. Brittany Martin: accepted to the Master of Science Biomedical and Health Sciences Program at the University of Alabama at Birmingham. Joshua Agee: accepted into the School of Graduate Studies in the Health Sciences at the University of Mississippi Medical Center. Tatyana Givens: accepted into the Mercer University College of Pharmacy. Class of 2016 - Courtney Mangum: accepted at the University at Buffalo Jacobs School of Medicine and Biomedical Sciences, the 2017 First-Year Medical Class. **(Appendix #14: Postgraduate Education)**

One trainee, Timera Brown (Class 2015), is finishing the undergraduate program and got an early acceptance to medical School at Warren Alpert School of Medicine of Brown University. **(Appendix #14: Postgraduate Education)**

Attendance and presentation at Scientific Meetings (51): Throughout the period of 2014 and 2017, a total of 51 presentations were performed in an oral or poster format by the trainees as result of abstracts submitted to Regional and National Scientific meetings, including Tougaloo College Research Symposiums, 2014-2016 Annual Biomedical Research Conference for Minority Students, 2017 American Association for Cancer Research Annual Meeting, 2014-2016 Prostate Cancer Research Mini Symposium and many others. More details on the **Appendixes # 5, 10, 12, 13 and 15**.

One trainee, Diva Whalen, recently published a paper as a co-author at BMC Cancer, entitled "Association of calcium sensing receptor polymorphisms at rs1801725 with circulating calcium in breast cancer patients". [**Appendix #16: Publication by Diva Whalen (Class 2014)**]

Diverse modalities for trainees tracking have been implemented. They have been used to prepare this Annual report:

Trainees' database: We implemented a database to register trainee's contact, biographical and training information, accomplishments such as fellowships, awards, employment, education, publications, funding received, and poster and oral presentations at scientific conferences, etc. Recently, an electronic Redcap-based survey helped us to compile information for population and update of our database **(Appendix #20: RedCap portal for student follow up)**. This work was diligently performed by Mr. Marcelo Sakiyama, program assistant. Our most recent summary update based on the information archived in the database refers to the academic progress of trainees:

14 undergraduate scholars from TC and JSU, gained experience in performing PCa research at UMMC-CI. ***Two (2) trainees are pursuing graduate studies in cancer biology***. Diva Whalen (Class of 2014) is entering her third year at Meharry Medical College to attain a Ph.D. Charles Phillips (Class of 2015) completed the first year at the School of Graduate Studies in Health Sciences, Department of Pathology, at UMMC. ***Six (6) trainees joined other higher education in Health Sciences related programs:*** Ansley Scoot (Class of 2014) was accepted at the University of Arkansas for Medical Sciences College of Medicine and Tatyana Givens (Class of 2014) was accepted into Mercer's Doctor of Pharmacy at Mercer University. ***Two (2) trainees are hired employees:*** Joshua Agee is a researcher coordinator at Open Arms Healthcare Center, UMMC. Angel Garcia is working as a Researcher at the University of Tennessee Health Science Center.

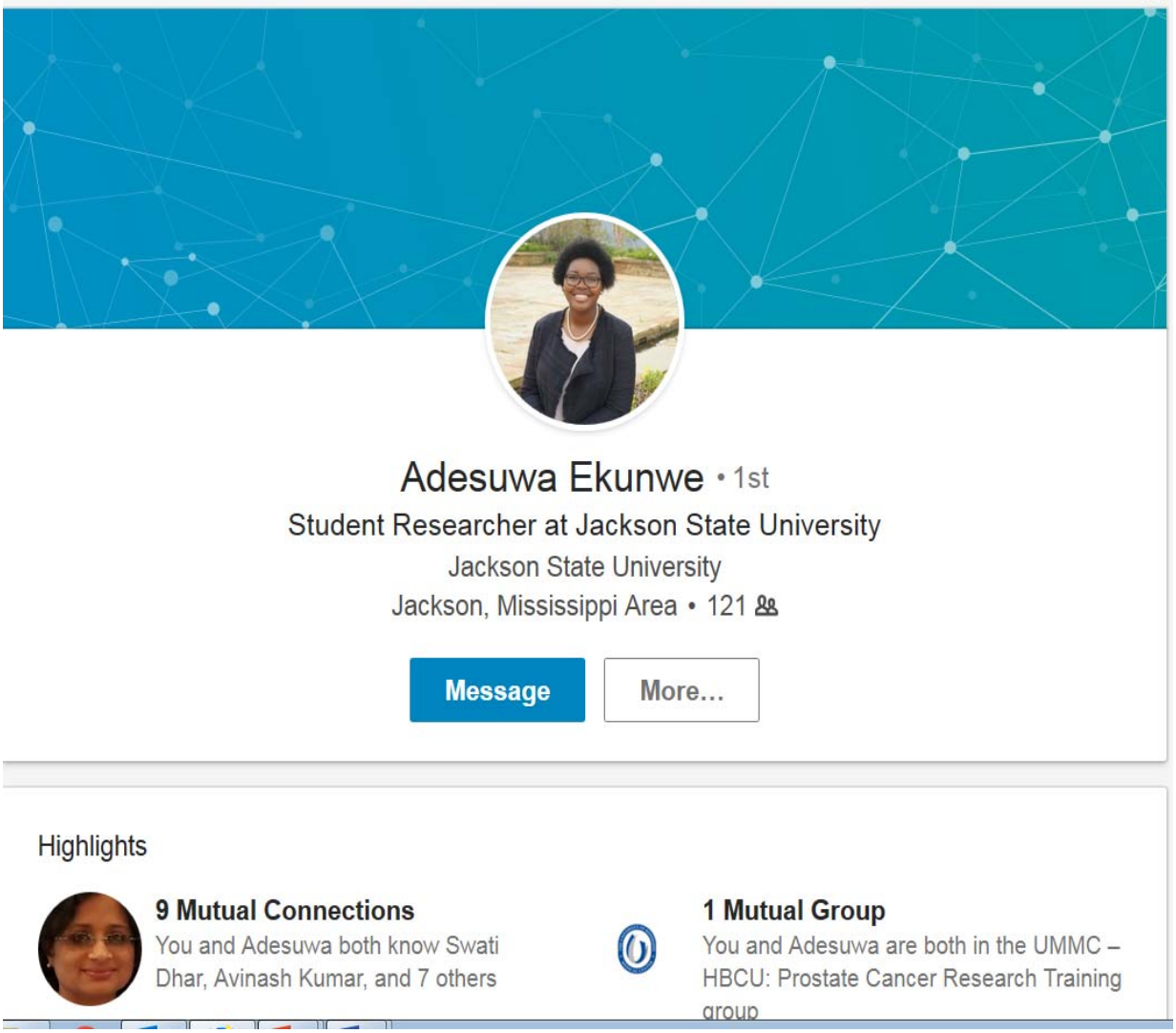
Four (4) trainees are currently pursuing graduation: Class of 2015: Adesuwa Ekunwe, is a Senior in Chemistry at JSU. Deion Phillips, is a Senior in Biology at JSU. Jamal Keyes, is a Senior in Chemistry at JSU. Timera Brown, is a Senior in Biology at TC and got an early acceptance to Medical School at Warren Alpert School of Medicine of Brown University. The Program Director, in conjunction with the faculty advisors, and assisted by Mr. Sakiyama maintains and updates the database of all information collected.

Table 2: Trainees Accomplishments							
Student	**Year of participation**	**Current position**	**Publications**	**Presentations in scientific meeting**	**Scientific Awards**	**Enrolled in postgraduate education**	**Health/Science related job**
Ansley Scott	2014	Medical Student	0	2	3	Yes	No
Anthony C. Keyes	2014	Graduate Student	0	4	3	Yes	No
Brittany N. Martin	2014	Master Student	0	3	2	Yes	No
Diva Whalen	2014	Graduate Student	1	6	2	Yes	No
Joshua E. Agee	2014	Research Coordinator	0	4	0	Yes	Yes
Tatyana Givens	2014	Pharmacy Student	0	2	0	Yes	No
Adesuwa Ekunwe	2015	Undergraduate Student	0	3	1	No	No
Angel G. Garcia	2015	Researcher	0	5	3	No	Yes
Charles Phillips	2015	Graduate Student	0	4	0	Yes	No
Deion Fields	2015	Undergraduate Student	0	2	0	No	No
Jamal J. Keyes	2015	Undergraduate Student	0	3	1	No	No
Timera Brown	2015	Undergraduate Student	0	5	2	No	No
Courtney Mangum	2016	Graduate Student	0	4	0	Yes	No
Ornella Amoah	2016	Non employed	0	4	1	No	No
TOTAL	**14 students**		**1**	**51**	**18**	**8**	**2**

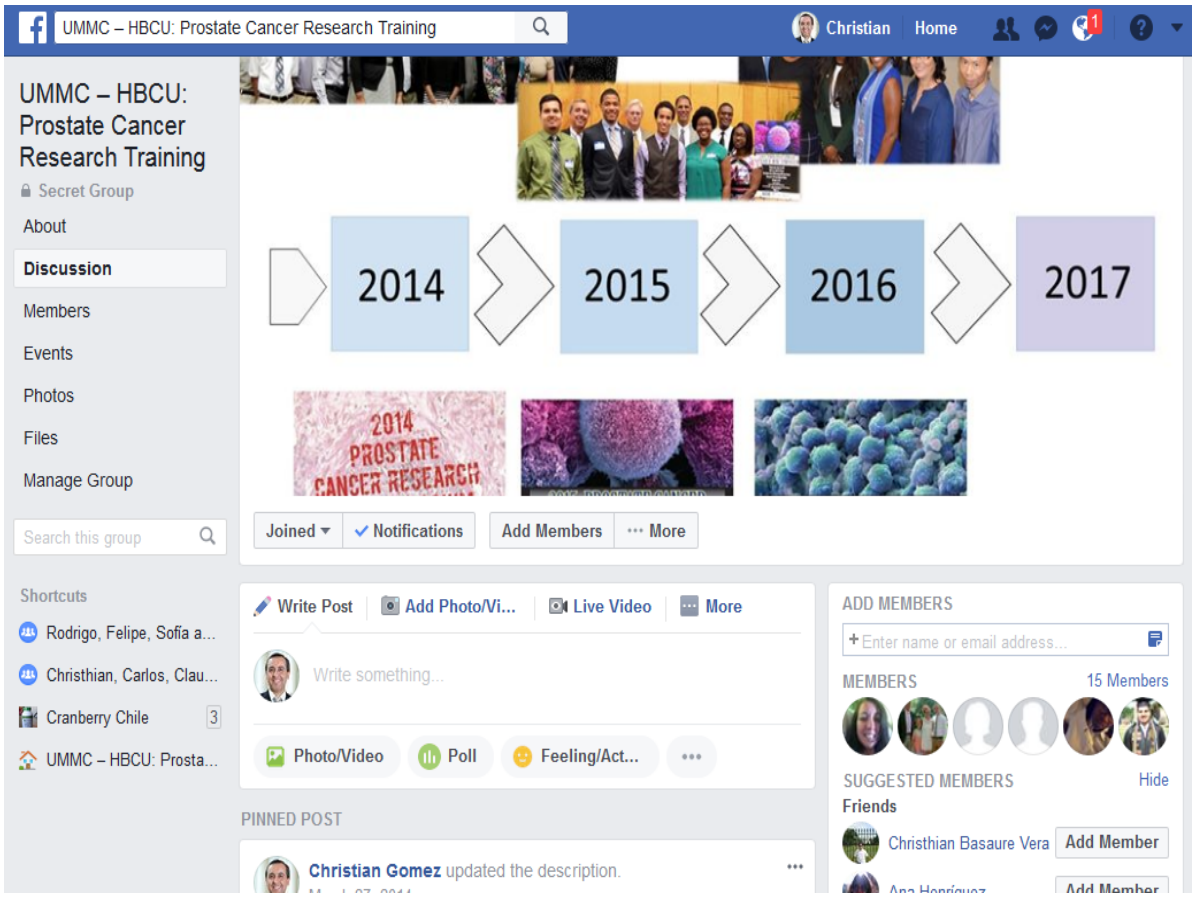
How were the results disseminated to communities of interest?

As dissemination modalities we used Facebook and LinkedIn. Those resources have been used by our trainees as means to obtain continuous tracking, promote engagement, interaction and professional networking, help professional work's dissemination, and develop professional presence. Social media additionally, has been used as a tool to educate the public about trainees' experience in the Program and as a way to increase public awareness of PCa research performed by minorities.

The following pictures exemplify use of social media as means of mentee tracking and program dissemination:



Trainees are instructed to develop their professional social profile
(Adesuwa Ekunwe - Class of 2015- most current LinkedIn update. 11/30/2017)



Social media allows outreach and Program dissemination (Facebook group page. most current update. 11/30/2017)

4. IMPACT

Development of the principal discipline(s) of the project: Since UMMC-CI faculty members are engaged in a variety of research projects, trainees have had the opportunity to be trained in different areas of PCa research. Particularly the trainees have been involved in mechanisms of tumorigenesis. The results generated will allow advancement on new therapeutic strategies for men with aggressive disease. Since our researchers also have interest in Biomarker Development and Validation, projects will help to distinguish aggressive from indolent disease in men newly diagnosed with PCa.

One of the most relevant aspects is the training of our students in relation to achieve superior level of PCa knowledge. A questionnaire was applied to specifically assessment of proposed goals. An unannounced pre (before first lecture) - vs. post (after the last lecture)-evaluation test evaluated the impact of the lectures program on the trainees' knowledge about PCa. Overall, see **Appendix #17: Prostate Cancer Knowledge Assessment** for test results, the students exhibited a doubling of their knowledge score (average pre-training score was 30.5% correct; average post-training score was 67.5% correct). Despite the small number of questions and students, one can draw a few clear observations. Before the class, none of the students had any knowledge of FDA-approved

PCa biomarkers. By the time the training ended, every student knew the correct answer. Tests such as this objectively demonstrate the achievements of our training program.

Other disciplines: Another area of interest the work the trainees is relevant for development of effective treatments and address of mechanisms of resistance for men with high-risk or metastatic PCa.

Technology transfer: It has been a tremendous impact of this project in allowing resource sharing between the UMMC campus and the HBCUs. UMMC, being the only academic research center in the state of Mississippi, has a unique capital of technology resources. The HBCUs have taken advantage of those resources as means to increase the value of their research programs in cancer biology, particularly PCa. As examples, many of the projects trainees have been involved utilized patient-derived materials and associated data, novel therapeutic models, agents or devices designed by UMMC researchers. As some students develop research at their HBCUs trough the academic year, they have taken knowledge and some of those resources to their schools.

Society beyond science and technology: The first ones impacted by our project have been our own trainees. They have become aware of the particularities of PCa for their own communities. As result of that (**Appendix #18: Biographies**), they have grown fonder of biomedical cancer research and have embraced the scientific career as a professional option. The Mississippi PCa HBCU Undergraduate Research Training Program is the first and only one in the state designed to provide undergraduate minority student training in PCa research at a research intensive environment. This Training Program has empowered HBCU undergraduates to pursue PCa careers, it has generated a pipeline for undergraduate research in PCa in Mississippi. Trainees of our program are becoming well-rounded professionals with training to thrive in PCa biomedical research, prevention, diagnosis and care. In the near future former mentees, as junior faculty will enlarge the ranks of minority researchers at TC, JSU or UMMC. They will impact their communities and will contribute to reduce PCa health disparities.

The UMMC community is very diverse and has interest in numerous disciplines of academic biomedical knowledge. Our program has generated a vibrant environment for interest in PCa research. This has been reflected in the overwhelmingly positive interest to our Prostate Cancer Research Mini Symposium. As noted by the attendance to this activity **(Appendix #6: Prostate Cancer Mini Symposium Sign in Sheets)** we were able to attract a diverse crowd. We have attracted not only researchers. To our activities, numerous clinicians, institutional and community leaders have attended. They have learned not only about basic and translational PCa cancer research with focus on disparities. They have also received a not complicated message on disease outcomes and behavioral intervention. Also community leaders and lay community members, attended to our activities this year. We are sure they transmitted our message to their communities.

5. CHANGES/PROBLEMS:
There are no problems to report.

There are no other changes or problems to report.

6. PRODUCTS: List any products resulting from the project during the reporting period.

Presentations: Fifty one (51) meeting presentations in the poster or oral format included work related to internships during the current report period. Trainees presented their work in local (41) and national (10) meetings such as the 2015 14th Research Symposium on Students' Summer Research Series at Tougaloo College; 2016 Mississippi College Undergraduate Research Symposium at Tougaloo College; 2014 - 2016 Prostate Cancer Research Mini Symposiums and 2016 Summer Undergraduate Research Symposium, both at UMMC; 2015 ABRCMS in Seattle, WA; 2016 ABRCMS in Tampa, FL; 2016 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM). Washington, D.C.; 2017 AACR Annual Meeting, Washington, D.C.; 2017 ABRCMS in Phoenix, WA. **(Appendixes # 5, 10, 12, 13 and 15).**

Website(s) or other Internet site(s):

Course webpage: http://www.cancer.org/cancer/prostatecancer/detailedguide/prostate-cancer-key-statistics

The webpage informs prospective applicants about eligibility requirements, Program components, Summer Research internship, housing assistance, application packet, contact information and news (**Appendix #1;** for the Course webpage screenshot).

We have generated two social media resources. (**Appendix #19** for social media resources screen shoots).

The Facebook group: https://www.facebook.com/groups/675020649225547/
The LinkedIn group: https://www.linkedin.com/grp/home?gid=6660607

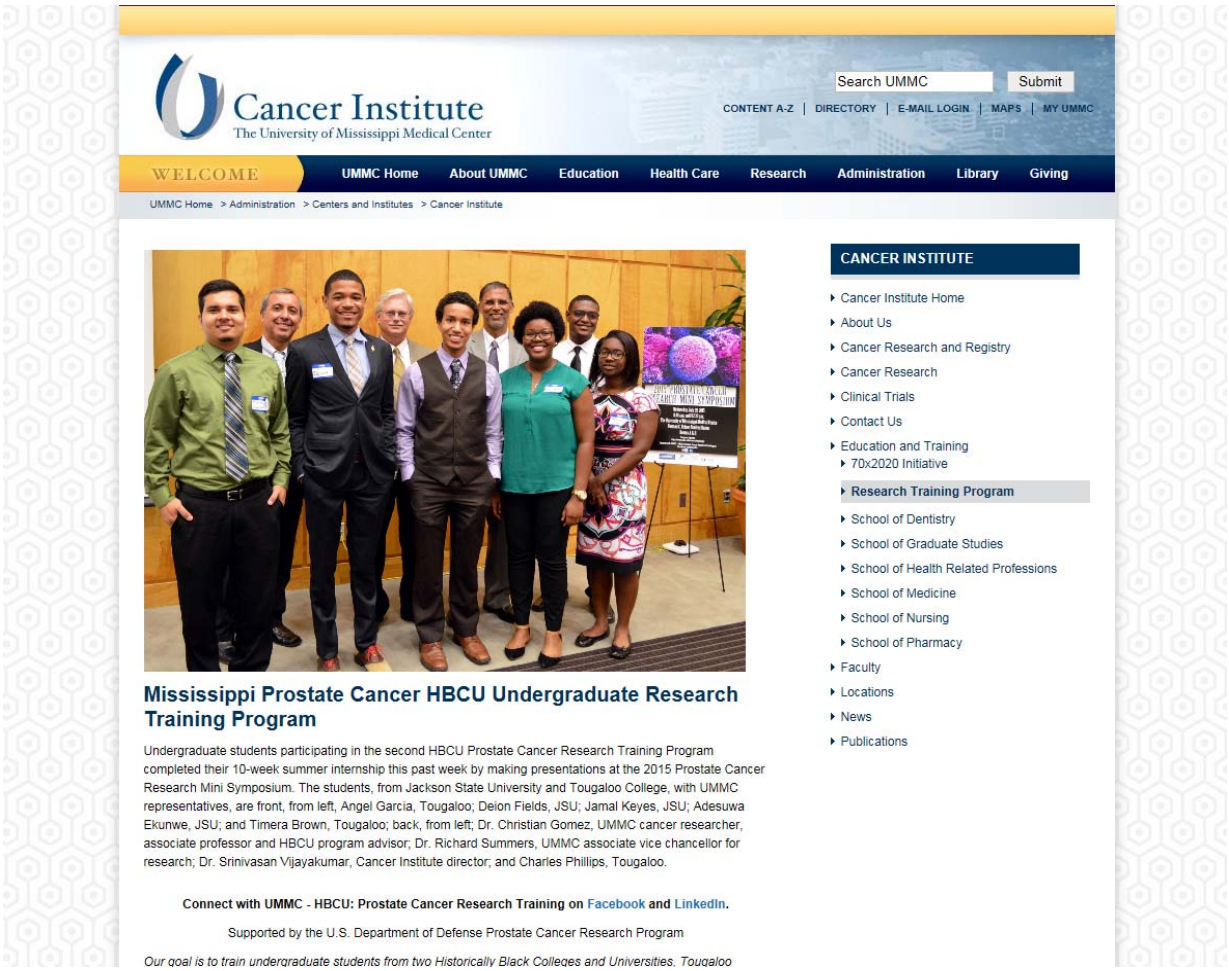
Periodically, the UMMC-Cancer Institute Facebook is reporting on our Program:
https://www.facebook.com/The-Cancer-Institute-at-UMMC-485738241532013/

These 4 resources provide powerful tools to obtain continuous tracking, promote engagement, interaction and professional networking, helping professional work' dissemination; and supporting developing of professional presence. Additionally, the social media resources are used as tools to educate the public about trainees' experience in the Program and as a way to increase public awareness of PCa research performed by minorities.

Educational aids or curricula: The development of the summer training course demanded an intensive curriculum. For details about the course program refer to **Appendix #3: Research Training Program.**

7. APPENDIXES

Appendix #1: Training Program Webpage



Cancer Institute
The University of Mississippi Medical Center

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CANCER INSTITUTE

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- Cancer Research
- Clinical Trials
- Contact Us
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  - 70x2020 Initiative
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  - School of Dentistry
  - School of Graduate Studies
  - School of Health Related Professions
  - School of Medicine
  - School of Nursing
  - School of Pharmacy
- Faculty
- Locations
- News
- Publications

Mississippi Prostate Cancer HBCU Undergraduate Research Training Program

Undergraduate students participating in the second HBCU Prostate Cancer Research Training Program completed their 10-week summer internship this past week by making presentations at the 2015 Prostate Cancer Research Mini Symposium. The students, from Jackson State University and Tougaloo College, with UMMC representatives, are front, from left, Angel Garcia, Tougaloo; Deion Fields, JSU; Jamal Keyes, JSU; Adesuwa Ekunwe, JSU; and Timera Brown, Tougaloo; back, from left; Dr. Christian Gomez, UMMC cancer researcher, associate professor and HBCU program advisor; Dr. Richard Summers, UMMC associate vice chancellor for research; Dr. Srinivasan Vijayakumar, Cancer Institute director; and Charles Phillips, Tougaloo.

Connect with UMMC - HBCU: Prostate Cancer Research Training on Facebook and LinkedIn.

Supported by the U.S. Department of Defense Prostate Cancer Research Program

Our goal is to train undergraduate students from two Historically Black Colleges and Universities. Tougaloo

Appendix #2: Program flyers



2014 Mississippi Prostate Cancer HBCU Undergraduate Research Training Program

Summer Experience in Cancer Health Disparities
at the University of Mississippi-Cancer Institute

Supported by the U.S. Department of Defense Prostate Cancer Research Program

Purpose: To train undergraduate students from Tougaloo College and Jackson State University so they can gain experience in performing prostate cancer research at the University of Mississippi Medical Center (UMMC)-Cancer Institute.

Duration: May 27, 2014 – August 1, 2014

Description: Students will participate in a 10-week comprehensive training program in Prostate Cancer research and care, perform hands on research, attend regular hosting lab meetings and a weekly one-on-one meeting with their mentors, attend research seminar series and lectures focused on prostate cancer, shadow clinicians, participate in a prostate cancer research symposium and prepare a final written report. Trainees will be involved in campus wide activities with undergraduates from other summer programs, learn about research programs at UMMC, postgraduate studies alternatives, graduate school application process, and will be provided opportunities in social settings to improve their networking and communication skills.

Financial: Successful applicants will receive a $6,000 stipend.

Eligibility: Applicants must be U.S. citizens, permanent residents or legal aliens who are pursuing a major in the life sciences, sophomores or junior standing for the upcoming fall semester, have successfully completed one semester of math and one year of sciences (biology, chemistry or physics), science grade point average of at least 3.0 at the time of submission, and have the intention of pursuing a Ph.D. after graduation.

Application package (available at www.umc.edu/reserachtraining):

1. Complete Mississippi Prostate Cancer HBCU Undergraduate Research Training Program application form
2. A written personal statement
3. Provide resume
4. Provide two letters of recommendation (one of which is completed by a STEM instructor)
5. Official transcripts of undergraduate grades

Deadline: **March 31, 2014, 5PM CT**

Notification: On or before April 30, 2014

Information: (www.umc.edu/researchtraining)

Freda K. Turpeau UMMC Cancer Institute 2500 North State Street Jackson, MS 39216 601-815-6802 (phone) 601-815-6806 (fax) fturpeau@umc.edu	Jinghe Mao, Ph.D. Tougaloo College 500 W. County Line Rd. Tougaloo, MS 39174 601-977-4450 (phone) 601-977-7898 (fax) jmao@tougaloo.edu	Stephen I. Ekunwe, Ph.D. Jackson State University 1400 J.R. Lynch Street Jackson, MS 39217 601-979-2586 (phone) 601-979-5853 (fax) stephen.i.ekunwe@jsums.edu

2015 Mississippi Prostate Cancer HBCU Undergraduate Research Training Program

Summer Experience in Cancer Health Disparities
at the University of Mississippi-Cancer Institute

Supported by the U.S. Department of Defense Prostate Cancer Research Program

Purpose: To train undergraduate students from Tougaloo College and Jackson State University so they can gain experience in performing prostate cancer research at the University of Mississippi Medical Center (UMMC)-Cancer Institute.

Duration: May 26, 2015 – July 31, 2015

Description: Students will participate in a 10-week comprehensive training program in Prostate Cancer research and care, perform hands on research, attend regular hosting lab meetings and a weekly one-on-one meeting with their mentors, attend research seminar series and lectures focused on prostate cancer, shadow clinicians, participate in a prostate cancer research symposium and prepare a final written report. Trainees will be involved in campus wide activities with undergraduates from other summer programs, learn about research programs at UMMC, postgraduate studies alternatives, graduate school application process, and will be provided opportunities in social settings to improve their networking and communication skills.

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2. A written personal statement
3. Provide resume
4. Provide two letters of recommendation (one of which is completed by a STEM instructor)
5. Official transcripts of undergraduate grades

Deadline: **March 27, 2015, 5PM CT**

Notification: On or before May 1, 2015

Information: (www.umc.edu/researchtraining)

Freda K. Turpeau UMMC Cancer Institute 2500 North State Street Jackson, MS 39216 601-815-6802 (phone) 601-815-6806 (fax) fturpeau@umc.edu	Jinghe Mao, Ph.D. Tougaloo College 500 W. County Line Rd. Tougaloo, MS 39174 601-977-4450 (phone) 601-977-7898 (fax) jmao@tougaloo.edu	Stephen I. Ekunwe, Ph.D. Jackson State University 1400 J.R. Lynch Street Jackson, MS 39217 601-979-2586 (phone) 601-979-5853 (fax) stephen.i.ekunwe@jsums.edu

2016 Mississippi Prostate Cancer HBCU Undergraduate Research Training Program

Summer Experience in Cancer Health Disparities
at the University of Mississippi-Cancer Institute

Supported by the U.S. Department of Defense Prostate Cancer Research Program

Purpose: To train undergraduate students from Tougaloo College and Jackson State University so they can gain experience in performing prostate cancer research at the University of Mississippi Medical Center (UMMC)-Cancer Institute.

Duration: May 31, 2016 – August 5, 2016

Description: Students will participate in a 10-week comprehensive training program in Prostate Cancer research and care, perform hands on research, attend regular hosting lab meetings and a weekly one-on-one meeting with their mentors, attend research seminar series and lectures focused on prostate cancer, shadow clinicians, participate in a prostate cancer research symposium and prepare a final written report. Trainees will be involved in campus wide activities with undergraduates from other summer programs, learn about research programs at UMMC, postgraduate studies alternatives, graduate school application process, and will be provided opportunities in social settings to improve their networking and communication skills.

Financial: Successful applicants will receive a $6,000 stipend.

Eligibility: Applicants must be U.S. citizens, permanent residents or legal aliens who are pursuing a major in the life sciences, sophomores or junior standing for the upcoming fall semester, have successfully completed one semester of math and one year of sciences (biology, chemistry or physics), science grade point average of at least 3.0 at the time of submission, and have the intention of pursuing a Ph.D. after graduation.

Application package (available at www.umc.edu/reserachtraining):

1. Complete Mississippi Prostate Cancer HBCU Undergraduate Research Training Program application form
2. A written personal statement
3. Provide resume
4. Provide two letters of recommendation (one of which is completed by a STEM instructor)
5. Official transcripts of undergraduate grades

Deadline: **March 28, 2016, 5PM CT**

Notification: On or before May 1, 2016

Information: (www.umc.edu/researchtraining)

Veronica Mayes UMMC Cancer Institute 2500 North State Street Jackson, MS 39216 601-815-6802 (phone) 601-815-6806 (fax) vmayes@umc.edu	Jinghe Mao, Ph.D. Tougaloo College 500 W. County Line Rd. Tougaloo, MS 39174 601-977-4450 (phone) 601-977-7898 (fax) jmao@tougaloo.edu	Stephen I. Ekunwe, Ph.D. Jackson State University 1400 J.R. Lynch Street Jackson, MS 39217 601-979-2586 (phone) 601-979-5853 (fax) stephen.i.ekunwe@jsums.edu

Appendix #3: Research Training Program

2014 Mississippi Prostate Cancer HBCU Undergraduate Research Training Program

May 27, 2014 – August 1, 2014

Time table:

Time Table for Summer Program Training Plan										
	wk 1	wk 2	wk 3	wk 4	wk 5	wk 6	wk 7	wk 8	wk 9	wk 10
Lab research										
Lab rotation										
Lectures										
Clinical shadow										
Presentations										

Research Mentors (refer to their webpages for more information):

Mentor	Research specialty	Teaching	Department
Azeddine Atfi, Ph.D.	Cell signaling in cancer	Mol Onc	Biochemistry Cancer Institute
Christian Gomez, Ph.D.	Tumor microenvironment in PCa	Mol Onc, Biochem	Pathology Cancer Institute
Chindo Hicks, Ph.D.	Population genetics in PCa	Bioinformatics	Medicine Cancer Institute
Kounosuke Watabe, Ph.D.	Tumor stem cell and metastasis in PCa and breast cancer	Mol Onc, Cell Biol, Virol	Microbiology Cancer Institute
Anait S. Levenson, M.D., Ph.D.	Epigenetic mechanisms in PCa progression	Mol Onc Pharmacology	Pathology Pharmacology Cancer Institute
Luis Martinez, Ph.D.	Cell signaling in cancer	Mol Onc, Biochem	Biochemistry Cancer Institute
Yin-Yuan Mo, Ph.D.	Non-coding RNA in PCa and breast cancer	Mol Onc, Cell Bio, Microbiol	Pharmacology Cancer Institute
Radhika Pochampally, Ph.D.	MicroRNA and stem cell in PCa	Mol Onc	Biochemistry Cancer Institute
Drazen Raucher, Ph.D.	Targeted drug delivery	Mol Onc, Biochem, Res Methods in Cell Bio	Biochemistry Cancer Institute
Xinchun Zhou, M.D., Ph.D.	Lipogenesis and marker discovery in PCa	Epidem, Infect Dis	Pathology Cancer Institute

Faculty Advisors:

Advisor	Institution	Department
Jinghe Mao, Ph.D., Professor	Tougaloo College	Biology
Stephen I. N. Ekunwe, Ph.D., Professor	Jackson State University	Biology

Internal Advisory Committee Members:

Member	Institution	Department
Srinivasan Vijayakumar, M.D., Professor, Director and Chairman	University of Mississippi Medical Center	Cancer Institute Radiation Oncology
Roy J. Duhé, Ph.D., Professor, Associate Director	University of Mississippi Medical Center	Pharmacology and Toxicology Cancer Education – UMMC CI

Lab rotations: Half-a-day activity. Students will visit labs involved in prostate cancer research at UMMC-Cancer Institute, Tougaloo College, and Jackson State University. Students will also attend lab meetings, discuss with lab PI or manager about the general lab research focus, and shadow a postdoc or graduate student.

Lecture program:

Location: Cancer Institute Conference Room 6th floor, G-651. Time: Mondays 9:00 a.m. – 10:00 a.m.

Mississippi Prostate Cancer HBCU Undergraduate Research Training Program-Lecture Syllabus			
Week	**Date**	**Topic**	**Instructor and Organizational Affiliation**
2	June 2, 2014	Basic Cancer Biology	Kounosuke Watabe, Ph.D., Professor, Deputy Director for Basic Science, UMMC-Cancer Institute
3	June 9, 2014	Prostate Cancer Biology	Anait S. Levenson, M.D., Ph.D., Associate Professor, Department of Pathology and Pharmacology and Toxicology, UMMC – Cancer Institute
4	June 16, 2014	Cancer Pathology	Christian Gomez, Ph.D., Associate Professor, Department of Pathology, UMMC – Cancer Institute
5	June 23, 2014	Prostate Cancer Therapeutics	Roy J. Duhé, Ph.D., Professor, Department of Pharmacology and Toxicology, Associate Director for Cancer Education, UMMC – Cancer Institute
6	June 30, 2014	Introduction to bioinformatics in prostate cancer research	Chindo Hicks, Ph.D., Associate Professor of Medicine; Director, Cancer Bioinformatics Core, UMMC-Cancer Institute
7	July 7, 2014	Prostate Cancer Clinical Science	Srinivasan Vijayakumar, M.D., D.M.R.T., F.A.C.R., Director, UMMC-Cancer Institute and Chairman of Radiation Oncology
8	July 14, 2014	Prostate Cancer Disparities in Mississippi	Deirdre B. Rogers, M.S., C.T.R., Director, Mississippi Cancer Registry, UMMC
9	July 21, 2014	Careers in Prostate Cancer Research and Round Table	Moderator: Christian Gomez, Ph.D., UMMC Cancer Institute Panelists: Srinivasan Vijayakumar, M.D, Director, UMMC Cancer Institute; Kounosuke Watabe, Ph.D., UMMC Cancer Institute; Jinghe Mao, Ph.D., Biology Department, Tougaloo College; and Stephen I. N. Ekunwe Ph.D., Biology Department, Jackson State University

Clinical Shadow:

Clinical shadow (Wednesday, weeks 4, 5, and 6): Students will shadow a clinician, resident, or staff. This activity will occur once a week and will also include touring of the PCa treatment-related facilities between 2-3 hours.

Week	Date	Clinical Mentors	Schedules
3	June 11, 2014	Charles R. Pound, M.D., Professor, Department of Medicine, Chief of the Division of Urology	3 students-Dr. Pound 3 students-Dr. Vijay
4	June 18, 2014	R. Darryl Hamilton, M.D., Associate Professor, Department of Medicine, Division of Hematology and Oncology; Louis V. Puneky, M.D., Associate Professor, Department of Medicine, Division of Hematology and Oncology; Natale Sheehan, M.D., Assistant Professor, Department of Medicine, Division of Hematology and Oncology	Welcome-8:30-9:00 am Dr. Hamilton Dr. Puneky Dr. Sheehan (1st group 9-10:30am) (2nd group 10:30-12pm)
5	June 25, 2014	Srinivasan Vijayakumar, M.D., Director, Cancer Institute and Chairman of Radiation Oncology	3 students-Dr. Pound 3 students-Dr. Vijay

Activities related to Discovery-U Program: For more information contact Mary L. Canterbury, Director of Business Operations, School of Graduate Studies in the Health Sciences, UMMC, phone: 601-984-1199. Pizza and beverages will be served at each seminar. Program will also include a bowling night, TBA.

Week	Date	Activity	Location
1	May 29, 2014. 4:30 pm	Welcome Supper for all Summer Research students and their mentors	Student Union upstairs
1	May 30, 2014. 12:00 pm	Orientation Lecture Safety Issues	Classroom Wing Room CW308
2	June 6, 2014. 12:00 pm	Seminar – Physiology Michael Ryan, Ph.D., Associate Professor, Department of Physiology and Biophysics, UMMC	Upper Amphitheater Room R354
3	June 13, 2014. 12:00 pm	Seminar – Pharmacology Jennifer Sasser, Ph.D., Assistant Professor, Department of Pharmacology and Toxicology,	Upper Amphitheater Room R354

		UMMC	
4	June 20, 2014. 12:00 pm	Seminar Sean Didion, Ph.D., Associate Professor, Department of Pharmacology and Toxicology, UMMC. Will include M.D., Ph.D. Students	Upper Amphitheater Room R354
5	June 27, 2014. 12:00 pm	Seminar – Biomedical Materials Science Amol Janorkar, Ph.D., Associate Professor, Biomedical Materials Science- Dentistry, UMMC	Upper Amphitheater Room R354
6	July, 4	No Seminar	
7	July 11, 2014. 12:00 pm	Seminar – Biochemistry Damian Romero, Ph.D., Assistant Professor, Department of Biochemistry, UMMC	Upper Amphitheater Room R354
8	July 18, 2014. 12:00 pm	Seminar – Neuroscience Lique Coolen, Ph.D., Professor, Departments of Physiology and Biophysics, Neurobiology & Anatomical Sciences, UMMC	Upper Amphitheater Room R354
9	July 25, 2014. 12:00 pm	Seminar – Microbiology Mary Marquart, Ph.D., Associate Professor, Department of Microbiology UMMC	Upper Amphitheater Room R354
10	August, 2014. 12:00 pm	Symposium Agenda TBD. Will include short talks (typically 4 minutes) by students.	Student Union upstairs

Prostate Cancer Research Mini Symposium: Wednesday, July 30, 2014 from 9-12 pm. The symposium will be held in the UMMC Norman C. Nelson Student Union Rooms A & B. The program will include presentations by trainees, Cancer Institute PCa researchers, and invited keynote PCa researchers.

2015 Mississippi Prostate Cancer HBCU Undergraduate Research Training Program

May 26, 2015 – July 31, 2015

Time table:

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	wk 1	wk 2	wk 3	wk 4	wk 5	wk 6	wk 7	wk 8	wk 9	wk 10
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Presentation										

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Mentor	Research specialty	Teaching	Department
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Christian Gomez, Ph.D.	Tumor microenvironment in PCa	Mol Onc, Biochem	Pathology Cancer Institute
Chindo Hicks, Ph.D.	Population genetics in PCa	Bioinformatics	Medicine Cancer Institute
Anait S. Levenson, M.D., Ph.D.	Epigenetic mechanisms in PCa progression	Mol Onc Pharmacology	Pathology Pharmacology Cancer Institute
Luis Martinez, Ph.D.	Cell signaling in cancer	Mol Onc, Biochem	Biochemistry Cancer Institute
Yin-Yuan Mo, Ph.D.	Non-coding RNA in PCa and breast cancer	Mol Onc, Cell Bio, Microbiol	Pharmacology Cancer Institute
Radhika Pochampally, Ph.D.	MicroRNA and stem cell in PCa	Mol Onc	Biochemistry Cancer Institute
Drazen Raucher, Ph.D.	Targeted drug delivery	Mol Onc, Biochem, Res Methods in Cell Bio	Biochemistry Cancer Institute
Xeli Xu, Ph.D.	Cancer stem cells	Mol Onc	Neurobiology & Anatomical Sciences Cancer Institute
Xinchun Zhou, M.D., Ph.D.	Lipogenesis and marker discovery in PCa	Epidem, Infect Dis	Pathology Cancer Institute

Faculty Advisors:

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Jinghe Mao, Ph.D., Professor	Tougaloo College	Biology
Stephen I. N. Ekunwe, Ph.D., Professor	Jackson State University	Biology

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Roy J. Duhé, Ph.D., Professor, Associate Director	University of Mississippi Medical Center	Pharmacology and Toxicology Cancer Education – UMMC CI

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Lecture program:

Location: Cancer Institute Conference Room 6th floor, G-651. Time: Mondays 9:00 a.m. – 10:00 a.m.

Mississippi Prostate Cancer HBCU Undergraduate Research Training Program-Lecture Syllabus			
Lecture	**Date**	**Topic**	**Instructor and Organizational Affiliation**
1	June 1, 2015	Basic Cancer Biology	Yin-yuan Mo, Ph.D., Professor, Department of Pharmacology and Toxicology. Director, Cancer Genetics Program, UMMC – Cancer Institute
2	June 8, 2015	Prostate Cancer Biology	Anait S. Levenson, M.D., Ph.D., Associate Professor, Department of Pathology and Pharmacology and Toxicology, UMMC – Cancer Institute
3	June 15, 2015	Introduction to bioinformatics in prostate cancer research	Chindo Hicks, Ph.D., Associate Professor of Medicine; Director, Cancer Bioinformatics Core, UMMC – Cancer Institute
4	June 22, 2015	Prostate Cancer Therapeutics	Roy J. Duhé, Ph.D., Professor, Department of Pharmacology and Toxicology, Associate Director for Cancer Education, UMMC – Cancer Institute
5	June 29, 2015	Prostate Cancer Markers	Christian Gomez, Ph.D., Associate Professor, Department of Pathology, UMMC – Cancer Institute
6	July 6, 2015	Prostate Cancer Clinical Science	Satya Packianathan, M.D., Ph.D., Assistant Professor, Department of Radiation Oncology, UMMC
7	July 13, 2015	Prostate Cancer Disparities in Mississippi	Deirdre B. Rogers, M.S., C.T.R., Director, Mississippi Cancer Registry, UMMC
8	July 20, 2015	Careers in Prostate Cancer Research and Round Table	Moderator: Christian Gomez, Ph.D., UMMC Cancer Institute Panelists: Srinivasan Vijayakumar, M.D, Director, UMMC Cancer Institute; Yin-yuan Mo, Ph.D., UMMC Cancer Institute; Jinghe Mao, Ph.D., Biology Department, Tougaloo College; and Stephen I. N. Ekunwe Ph.D., Biology Department, Jackson State University

Clinical Shadow:

Clinical shadow (Wednesday, weeks 3, 4, and 5): Students will shadow a clinician, resident, or staff. This activity will occur once a week and will also include touring of the PCa treatment-related facilities between 2-3 hours.

Clinical Mentors	Week	Dates	Mentor
Charles R. Pound, M.D., Professor, Department of Medicine, Chief of the Division of Urology Srinivasan Vijayakumar, M.D., Director, Cancer Institute and Chairman of Radiation Oncology	3	June 10, 2015	3-Dr. Pound 3-Dr. Vijay
R. Darryl Hamilton, M.D., Associate Professor, Department of Medicine, Division of Hematology and Oncology; Louis V. Puneky, M.D., Associate Professor, Department of Medicine, Division of Hematology and Oncology; Natale Sheehan, M.D., Assistant Professor, Department of Medicine, Division of Hematology and Oncology	4	June 17, 2015	Welcome-8:30-9:00 am Dr. Hamilton Dr. Puneky Dr. Sheehan (1st group 9-10:30am) (2nd group 10:30-12pm)
Charles R. Pound, M.D., Professor, Department of Medicine, Chief of the Division of Urology Srinivasan Vijayakumar, M.D., Director, Cancer Institute and Chairman of Radiation Oncology	5	June 24, 2014	3-Dr. Pound 3-Dr. Vijay

Prostate Cancer Research Mini Symposium: Wednesday, July 29, 2015 from 9-12 pm. The symposium will be held in the UMMC Norman C. Nelson Student Union Rooms A & B. The program will include presentations by trainees, Cancer Institute PCa researchers, and invited keynote PCa researchers.

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May 31, 2016 – August 5, 2016

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	wk 1	wk 2	wk 3	wk 4	wk 5	wk 6	wk 7	wk 8	wk 9	wk 10
Lab research										
Lectures										
Clinical shadow										
Presentation										

Research Mentors:

Mentor	Research specialty	Teaching	Department
Gene Bidwell, Ph.D.	Targeted drug delivery	Biochem, Mol Onc	Neurology and Biochemistry
Christian Gomez, Ph.D.	Tumor microenvironment in PCa	Mol Onc, Biochem	Pathology Cancer Institute
Wael M. ElShamy, Ph.D.	Cell signaling in cancer	Mol Onc	Radiation Oncology, Cancer Institute
Joseph Maher , M.D.	Cell-fate determination in development and oncogenesis	Mol Onc	Medicine, Cancer Institute
Yin-Yuan Mo, Ph.D.	Non-coding RNA in PCa and breast cancer	Mol Onc, Cell Bio, Microbiol	Pharmacology Cancer Institute
Radhika Pochampally, Ph.D.	MicroRNA and stem cell in PCa	Mol Onc	Biochemistry Cancer Institute
Drazen Raucher, Ph.D.	Targeted drug delivery	Mol Onc, Biochem, Res Methods in Cell Bio	Biochemistry Cancer Institute
Xeli Xu, Ph.D.	Cancer stem cells	Mol Onc	Neurobiology & Anatomical Sciences Cancer Institute
Xinchun Zhou, M.D., Ph.D.	Lipogenesis and marker discovery in PCa	Epidem, Infect Dis	Pathology Cancer Institute

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Stephen I. N. Ekunwe, Ph.D., Professor	Jackson State University	Biology

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Roy J. Duhé, Ph.D., Professor, Associate Director	University of Mississippi Medical Center	Pharmacology and Toxicology Cancer Education – UMMC CI

Lab rotations: Half-a-day activity. Students will visit labs involved in prostate cancer research at UMMC-Cancer Institute, Tougaloo College, and Jackson State University. Students will also attend lab meetings, discuss with lab PI or manager about the general lab research focus, and shadow a postdoc or graduate student.

Lecture program:

Location: Cancer Institute Conference Room 6th floor, G-651. Time: Mondays 9:00 a.m. – 10:00 a.m.

Mississippi Prostate Cancer HBCU Undergraduate Research Training Program-Lecture Syllabus			
Lecture	**Date**	**Topic**	**Instructor and Organizational Affiliation**
1	June 6, 2016	Basic Cancer Biology	Yin-yuan Mo, Ph.D., Professor, Department of Pharmacology and Toxicology. Director, Cancer Genetics Program, UMMC – Cancer Institute
2	June 13, 2016	Prostate Cancer Biology	Avinash Kumar, Ph.D., Postdoctoral Fellow, UMMC – Cancer Institute
3	June 20, 2016	Prostate Cancer Markers	Christian Gomez, Ph.D., Associate Professor, Department of Pathology, UMMC – Cancer Institute
4	June 27, 2016	Prostate Cancer Therapeutics	Roy J. Duhé, Ph.D., Professor, Department of Pharmacology and Toxicology, Associate Director for Cancer Education, UMMC – Cancer Institute
5	July 11, 2016	Prostate Cancer Clinical Science	Satya Packianathan, M.D., Ph.D., Assistant Professor, Department of Radiation Oncology, UMMC
6	July 18, 2016	Prostate Cancer Disparities in Mississippi	Deirdre B. Rogers, M.S., C.T.R., Director, Mississippi Cancer Registry, UMMC
7	July 25, 2016	Myrlie Evers-Williams Institute for the Elimination of Health Disparities	Marino A. Bruce, Ph.D., M.S.R.C., M.Div., C.R.C., Science Director, Myrlie Evers-Williams Institute for the Elimination of Health Disparities; Founding Director, Center for Health of Minority Males (C-HMM); Program Administrator, HBCU PRIDE
8	August 1, 2016	Careers in Prostate Cancer Research and Round Table	Moderator: Christian Gomez, Ph.D., UMMC Cancer Institute Panelists: Srinivasan Vijayakumar, M.D, Director, UMMC Cancer Institute; Jinghe Mao, Ph.D., Biology Department, Tougaloo College; and Stephen I. N. Ekunwe Ph.D., Biology Department, Jackson State University

Clinical Shadow:

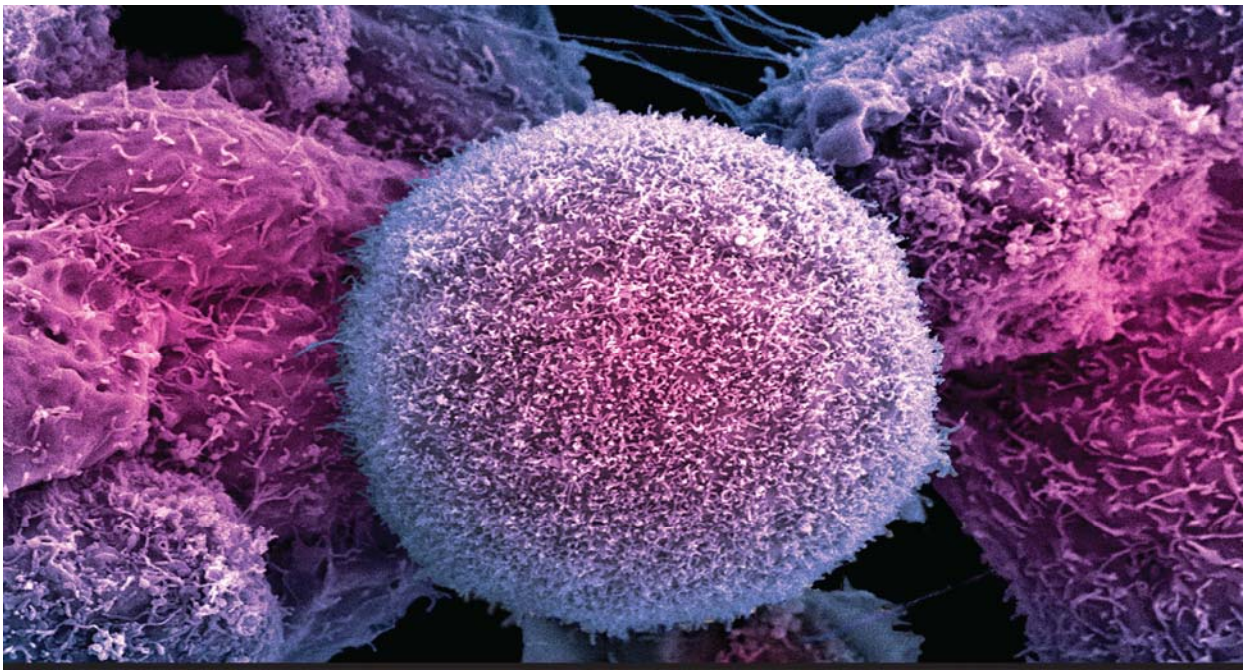
Clinical shadow (Wednesday, weeks 3, 4, and 5): Students will shadow a clinician, resident, or staff. This activity will occur once a week and will also include touring of the PCa treatment-related facilities between 2-3 hours.

Clinical Mentors	Week	Dates	Mentor
Charles R. Pound, M.D., Professor, Department of Medicine, Chief of the Division of Urology	3	June 15, 2016	Dr. Pound
R. Darryl Hamilton, M.D., Associate Professor, Department of Medicine, Division of Hematology and Oncology; Louis V. Puneky, M.D., Associate Professor, Department of Medicine, Division of Hematology and Oncology; Natale Sheehan, M.D., Assistant Professor, Department of Medicine, Division of Hematology and Oncology	4	June 22, 2016	Dr. Hamilton Dr. Puneky Dr. Sheehan (8:30am-10:30am)
Srinivasan Vijayakumar, M.D., Director, Cancer Institute and Chairman of Radiation Oncology	5	June 29, 2016	Dr. Vijay

Prostate Cancer Research Mini Symposium: Wednesday, August 3, 2016 from 9-12 pm. The symposium will be held in the UMMC Campus. The program will include presentations by trainees, Cancer Institute PCa researchers, and invited keynote PCa researchers.

Appendix #4: Prostate Cancer Mini Symposium Posters





2015 PROSTATE CANCER RESEARCH MINI SYMPOSIUM

Wednesday, July 29, 2015
8:30 a.m. until 12:30 p.m.
The University of Mississippi Medical Center
Norman C. Nelson Student Union
Rooms A & B

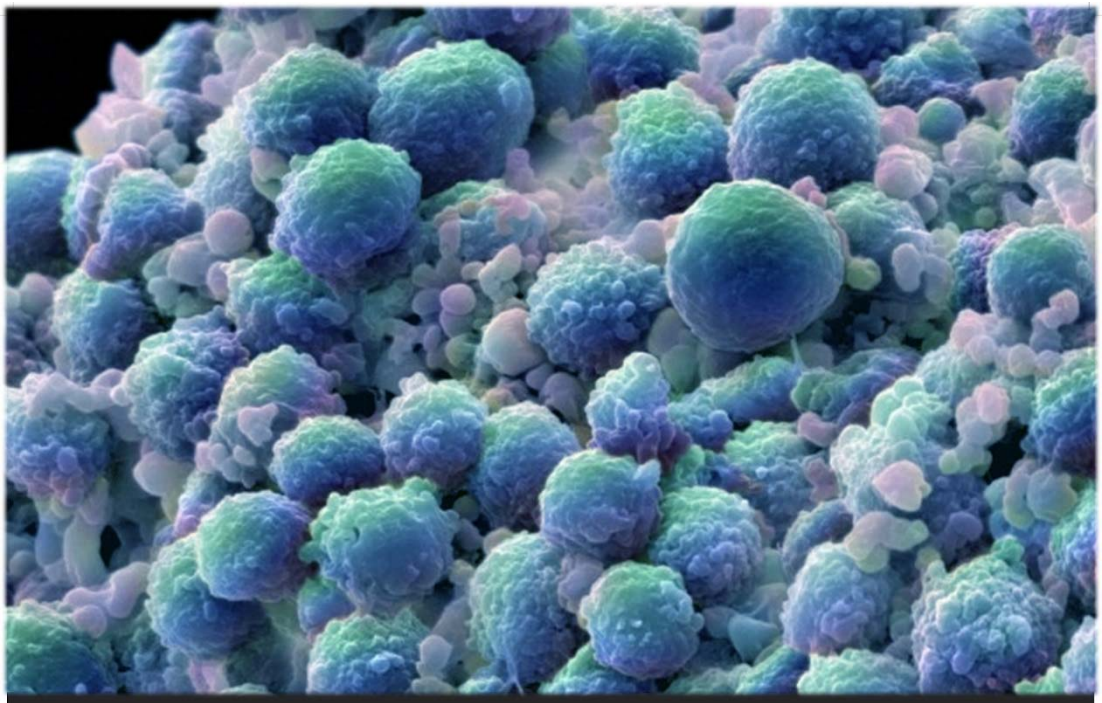
Program Agenda:
https://www.umc.edu/rsearchtraining/

Connect with UMMC – HBCU: Prostate Cancer Research Training on Facebook and LinkedIn

Congressionally Directed Medical Research Programs CDMRP Department of Defense

JSU JACKSON STATE UNIVERSITY

UMMC Cancer Institute



2016 Prostate Cancer Research Mini Symposium

Wednesday, August 3rd, 2016
9:00 a.m. until 12:30 p.m.
University of Mississippi Medical Center
Lower Amphitheater
Room R153

Registration will begin at 8:30 a.m.

More Information:
https://www.umc.edu/researchtraining/

Connect with UMMC - HBCU: Prostate Cancer Research Training on Facebook and LinkedIn

Appendix #5: Prostate Cancer Mini Symposium Agendas



AGENDA

2014 Prostate Cancer Research Mini Symposium

Wednesday, July 30, 2014

University of Mississippi Medical Center
Norman C. Nelson Student Union
Rooms A & B
2500 North State Street
Jackson, MS 39216

8:30 – 8:45 a.m. ***REGISTRATION***

8:50 – 9 a.m. ***WELCOME AND INTRODUCTION***

Kounosuke Watabe, Ph.D., Professor of Microbiology and Biochemistry, Deputy Director for Basic Science of the Cancer Institute, member of the Cancer Institute Cancer Genetics Program, Principal investigator UMMC – HBCU: Prostate Cancer Research Training Program

9 – 9:45 a.m. ***SPECIAL LECTURE***

"Biomarkers of Prostate Cancer Recurrence in Racially Diverse Populations"

Carlos Moreno, Ph.D.

Associate Professor
Department of Pathology & Laboratory Medicine
Emory University School of Medicine

9:45 – 9:55 a.m. Discussion — Stephen I. N. Ekunwe, Ph.D.
Professor of Biology
Jackson State University

Session 1: Novel therapeutics approaches for prostate cancer

10 – 10:40 a.m. — **Moderator:** Christian R. Gomez, Ph.D.
Associate Professor of Pathology and of Radiation Oncology, and member of the Cancer Institute Tumor Cell Biology Program,

	Coordinator UMMC – HBCU: Prostate Cancer Research Training Program
10 – 10:15 a.m.	**Novel epigenetic mechanisms of dietary stilbenes: can we prevent prostate cancer?** **Anait S. Levenson, M.D., Ph.D.** Associate Professor of Pathology and of Pharmacology and Toxicology, member of the Cancer Institute Tumor Cell Biology Program
10:15 – 10:20 a.m. Discussion	
10:20 – 10:35 a.m.	**Prostate cancer therapy and castration resistance** **Yin-Yuan Mo, Ph.D.** Professor of Pharmacology and Toxicology, Cancer Institute Cancer Genetics Program Director
10:35 – 10:40 a.m. Discussion	
10:40 – 11 a.m.	***COFFEE BREAK***

Session 2: Career Development

11– Noon	**Moderator:** Jinghe Mao, Ph.D., Professor of Biology, Tougaloo College. Undergraduate Faculty Advisor UMMC – HBCU: UMMC – HBCU: Prostate Cancer Research Training
11 – 11:10 a.m.	Student presentation: **Joshua Agee**, Tougaloo College. Mentor Xinchun Zhou, M.D., Ph.D., Assistant Professor of Pathology, member of the Cancer Institute Tumor Cell Biology Program
11:10 – 11:20 a.m.	Student presentation: **Tatyana Givens**, Jackson State University. Mentor: Chindo Hicks, Ph.D., Associate Professor of Medicine and Director of the Cancer Institute Bioinformatics Core
11:20 – 11:30 a.m.	Student presentation: **Anthony Keyes**, Jackson State University. Mentors: Drazen Raucher, Ph.D., Professor of Biochemistry and member of Cancer Institute Molecular Cancer Therapeutics Program, Kounosuke Watabe, Ph.D., Professor of Microbiology and Biochemistry, Deputy Director for Basic Science of the Cancer Institute, member of the Cancer Institute Cancer Genetics Program, Principal investigator UMMC – HBCU: Prostate Cancer Research Training Program

11:30 – 11:40 a.m. Student presentation: **Brittany Martin**, Jackson State University. Mentor: Christian Gomez, Ph.D., Associate Professor of Pathology and of Radiation Oncology, and member of the Cancer Institute Tumor Cell Biology Program, Coordinator UMMC – HBCU: Prostate Cancer Research Training Program

11:40 – 11:50 a.m. Student presentation: **Ansley Scott**, Tougaloo College. Mentor: Yin-Yuan Mo, Ph.D., Professor of Pharmacology and Toxicology and Director of the Cancer Institute Cancer Genetics Program

11:50 – Noon Student presentation: **Diva Whalen**, Tougaloo College. Mentor: Anait Levenson, M.D., Ph.D., Associate Professor of Pathology and Pharmacology, and member of the Cancer Institute Tumor Cell Biology Program

Noon – 12:20 p.m. ***SPECIAL LECTURE***

"Community Health Advisors-Men in Black and Blue
Fighting Prostate Cancer in the Mississippi Delta"

Freddie White-Johnson, M.P.P.A.

Program Director of the Mississippi Network for Cancer Control and Prevention
University of Southern Mississippi
Founder and President of the Fannie Lou Hamer Cancer Foundation

12:20 – 12:25 p.m. Discussion

12:25 – 12:30 p.m. ***CLOSING REMARKS***

Christian Gomez, Ph.D.
Associate Professor of Pathology and of Radiation Oncology, and member of the Cancer Institute Tumor Cell Biology Program, Coordinator UMMC – HBCU: Prostate Cancer Research Training Program

12:30 – 12:40 p.m. ***ADJOURN***

12:40 – 1 p.m. ***STUDENTS COMPLETE EVALUATION QUESTIONNAIRES***

AGENDA

2015 Prostate Cancer Research Mini Symposium

Wednesday, July 29, 2015

University of Mississippi Medical Center
Norman C. Nelson Student Union
Rooms A & B
2500 North State Street
Jackson, MS 39216

8:30AM – 8:45AM

REGISTRATION

8:50AM – 9:00AM

WELCOME AND INTRODUCTION

Christian Gomez, Ph.D. Principal Investigator UMMC – HBCU: Prostate Cancer Research Training Program

9:00AM – 9:25AM

SPECIAL LECTURE

"Critical Fork Points and Role of Molecular Markers in Clinical Decision Making in Prostate Cancer"
Srinivasan Vijayakumar, Director UMMC-Cancer Institute
Professor and Chairman, Department of Radiation Oncology
University of Mississippi Medical Center (UMMC)

9:25AM – 9:30AM Discussion: Prostate Cancer Research
Stephen I. N. Ekunwe, Ph.D.
Professor, Department of Biology, Jackson State University
Undergraduate Faculty Advisor UMMC – HBCU: Prostate Cancer Research Training Program

Session 1: Novel markers and therapeutics approaches for prostate cancer

9:30AM - 10:10AM	**Moderator:** Christian R. Gomez, Ph.D. Associate Professor Department of Pathology UMMC Cancer Institute
9:30AM – 9:45AM	**"Resistance Mechanisms of Prostate Cancer to Radiation Therapy"** Mohamed Hassan, Ph.D. Postdoctoral Fellow UMMC-Cancer Institute
9:45AM – 9:50AM	Discussion
9:50AM – 10:05AM	**"Methylation markers in prostate cancer disparities"** Jovanny Zabaleta, Ph.D. Assistant Professor of Pediatrics Stanley S. Scott Cancer Center, Louisiana State University Health Sciences Center
10:05AM – 10:10AM	Discussion
10:10AM – 10:30AM	***COFFEE BREAK***

Session 2: Career Development

10:30AM – 11:30PM	**Moderator:** Jinghe Mao, Ph.D., Professor of Biology, Tougaloo College. Undergraduate Faculty Advisor UMMC – HBCU: Prostate Cancer Research Training Program
10:30AM – 10:40AM	Student presentation: **Adesuwa Ekunwe**, Jackson State University. Mentor: Anait Levenson, M.D., Ph.D., Professor of Pathology, member of the Cancer Institute Tumor Cell Biology Program
10:40AM – 10:50AM	Student presentation: **Angel Garcia**, Tougaloo College. Mentor: Christian Gomez, Ph.D., Associate Professor of Pathology and of Radiation Oncology, and member of the Cancer Institute Tumor Cell Biology Program, Program Director UMMC – HBCU: Prostate Cancer Research Training Program

10:50AM – 11:00AM Student presentation: **Charles Phillips**, Tougaloo College. Mentor: Yin-Yuan Mo, Ph.D., Professor of Pharmacology and Toxicology and Director of the Cancer Institute Cancer Genetics Program

11:00AM – 11:10AM Student presentation: **Deion Fields**, Jackson State University. Mentor: Keli Xu, Ph.D., Assistant Professor of Neurobiology & Anatomical Sciences, member of the Cancer Institute Tumor Cell Biology Program

11:10AM – 11:20AM Student presentation: **Jamal Keyes**, Jackson State University. Mentor: Drazen Raucher, Ph.D., Professor of Biochemistry and member of Cancer Institute Molecular Cancer Therapeutics Program

11:20AM – 11:30PM Student presentation: **Timera Brown**, Tougaloo College. Mentor Xinchun Zhou, M.D., Ph.D., Assistant Professor of Pathology, member of the Cancer Institute Tumor Cell Biology Program

11:30PM – 12:10PM

SPECIAL LECTURE

"Prostate Cancer Molecular Biomarker Development Among African American Compared to European American Men"

Dr. Isaac Powell, M.D.
Professor
Wayne State University - School of Medicine
Karmanos Cancer Institute

Introduction by Srinivasan Vijayakumar, M.D.
Director UMMC-Cancer Institute
Professor and Chairman, Department of Radiation Oncology UMMC

12:10PM – 12:15PM Discussion

12:15PM – 12:30PM

CLOSING REMARKS

Richard Summers, M.D.
Associate Vice Chancellor for Research UMMC, Professor of Medicine

12:40PM – 1:30PM

LUNCH/DESSERTS RECEPTION

AGENDA

2016 Prostate Cancer Research Mini Symposium

Wednesday, August 3, 2016

University of Mississippi Medical Center
UMMC Lower Amphitheater, R153
2500 North State Street
Jackson, MS 39216

8:30AM – 9:00AM

REGISTRATION

9:00AM – 9:05AM

WELCOME AND INTRODUCTION

Christian Gomez, Ph.D. Principal Investigator UMMC – HBCU: Prostate Cancer Research Training Program

9:05AM – 9:35AM

SPECIAL LECTURE

"Precision Medicine and Its Role in Overcoming Disparities in Health Care in Mississippi"
Srinivasan Vijayakumar, Director UMMC-Cancer Institute
Professor and Chairman, Department of Radiation Oncology
University of Mississippi Medical Center (UMMC)

9:35AM – 9:40AM — Discussion: Christian Gomez, Ph.D.
Associate Professor of Pathology and of Radiation Oncology, member of the Cancer Institute Tumor Cell Biology Program, Program Director UMMC – HBCU: Prostate Cancer Research Training Program

9:40AM - 10:20AM

Session 1: Novel therapeutics approaches for prostate cancer

	Moderator: Christian Gomez, Ph.D. Associate Professor of Pathology and of Radiation Oncology, member of the Cancer Institute Tumor Cell Biology Program, Program Director UMMC – HBCU: Prostate Cancer Research Training Program
9:40AM – 9:55AM	**"Potential Roles of Lunatic Fringe and Notch in Aggressive Prostate Cancer"** Keli Xu, Ph.D. Assistant Professor of Neurobiology and of Anatomical Sciences, member of the Cancer Institute Tumor Cell Biology Program
9:55AM – 10:00AM	Discussion
10:00AM – 10:15AM	**"Targeted Treatment of Prostate Cancer"** Timothy Turner, Ph.D. Professor and Chairman Department of Biology, Jackson State University
10:15AM – 10:20AM	Discussion
10:20AM – 10:30AM	***COFFEE BREAK***
10:30AM – 11:25PM	***Session 2: Career Development*** **Moderator:** Jinghe Mao, Ph.D., Professor of Biology, Tougaloo College. Undergraduate Faculty Advisor UMMC – HBCU: Prostate Cancer Research Training Program
10:30AM – 10:45AM	**"Novel Therapeutic Strategy using Dietary Bioactive Compound for Prostate Cancer"** Nasir Butt, Ph.D. Candidate. Co-mentors: Christian Gomez, Ph.D., Associate Professor of Pathology and of Radiation Oncology, member of the Cancer Institute Tumor Cell Biology Program, Program Director UMMC – HBCU: Prostate Cancer Research Training Program; Anait Levenson, M.D., Ph.D., Professor of Cancer Research and Pharmacology. Associate Dean for Research and Graduate Studies, Arnold & Marie Schwartz College of Pharmacy and Health Sciences, Long Island University – Brooklyn
10:45AM – 10:50AM	Discussion

10:50AM – 11:05AM	**"MHC Class I Polypeptide-Related Sequence A (MICA) as a Factor of Aggressive Prostate Cancer"** Marcelo Sakiyama, Ph.D. Candidate. Mentor: Mentor: Christian Gomez, Ph.D., Associate Professor of Pathology and of Radiation Oncology, member of the Cancer Institute Tumor Cell Biology Program, Program Director UMMC – HBCU: Prostate Cancer Research Training Program
11:05AM – 11:10AM	Discussion
11:10AM – 11:15AM	**"Identifying Progression of Aggressive Prostate Cancer Originating from Lunatic Fringe/Notch-Regulated Mice Models"** Courtney Mangum, UMMC – HBCU: Prostate Cancer Research Training Program student. Tougaloo College. Mentor: Keli Xu, Ph.D. Assistant Professor of Neurobiology and of Anatomical Sciences, member of the Cancer Institute Tumor Cell Biology Program
11:15AM – 11:17AM	Discussion
11:17AM – 11:22AM	**"Effects of Hypoxia on the Aggressiveness of Prostate Cancer"** Ornella Amoah, UMMC – HBCU: Prostate Cancer Research Training Program student. Jackson State University. Mentor: Christian Gomez, Ph.D., Associate Professor of Pathology and of Radiation Oncology, member of the Cancer Institute Tumor Cell Biology Program, Program Director UMMC – HBCU: Prostate Cancer Research Training Program
11:22AM – 11:24AM	Discussion

11:25AM – 11:40AM

SPECIAL LECTURE

"The Next Step: Success After the Program"
Diva Whalen
Graduate Student
Meharry Medical College
UMMC – HBCU: Prostate Cancer Research Training Program Class of 2014

Introduction by Jinghe Mao, Ph.D., Professor of Biology, Tougaloo College.
Undergraduate Faculty Advisor UMMC – HBCU: Prostate Cancer Research Training Program

11:40AM – 11:45AM	Discussion

11:45AM – 12:00PM

SPECIAL LECTURE

"Undergraduate Training for Biomedical Research at Tougaloo College"

Jinghe Mao, Ph.D., Professor of Biology, Tougaloo College.
Undergraduate Faculty Advisor UMMC – HBCU: Prostate Cancer Research Training Program

Introduction by Roy J. Duhé Ph.D., Professor, Department of Pharmacology and Toxicology, Associate Director for Cancer Education, UMMC – Cancer Institute. Member Advisory Committee UMMC – HBCU: Prostate Cancer Research Training Program

12:00PM – 12:05PM Discussion

12:05PM – 12:10PM

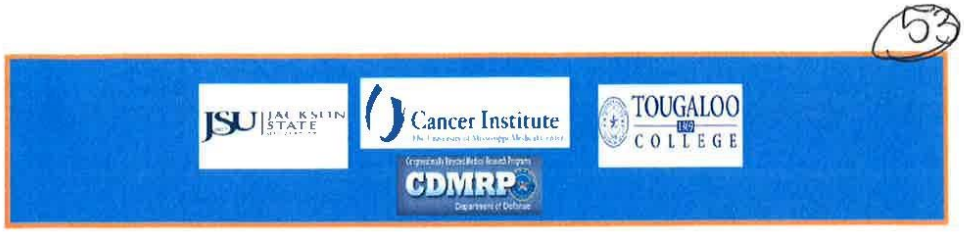
CLOSING REMARKS

Christian Gomez, Ph.D. Principal Investigator UMMC – HBCU: Prostate Cancer Research Training Program

12:10PM – 1:00PM

BOX LUNCH

Appendix #6: Prostate Cancer Mini Symposium Sign in Sheets



2014 Prostate Cancer Research Mini Symposium
Wednesday, July 30, 2014

University of Mississippi Medical Center
Norman C. Nelson Student Union

Jackson, Mississippi

Name	Organization/School
Freddie White Johnson	MS Network for Cancer Control/
	The University of Southern MS / FLHC
Helen Bolden Johnson	Fannie Lou Hamer Cancer Foundation
Willie Johnson	Fannie Lou Hamer Cancer Foundation (FLHCF)
Abdelouahid Elkhettouti	UMMC Cancer Institute
S. VIJAYAKUMAR	UMMC
Joseph Mayo	Tougaloo
Stephen Ekunsoe	JSU
DAVID S PASCO	NCNPR-OXFORD-U.MISS
Ritika Ramani	VAMC Cancer Inst
Chindo Hicks	CI
Jane Severson	CI
Bibbin Tom Paul	CI
Jim Mayo	CI
Jennifer M Shelby	CI
Krishna Chandran	UMC Biochem
Luis Martinez	UMC Biochem
Jianguo Huang	UMC Biochem

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2014 Prostate Cancer Research Mini Symposium
Wednesday, July 30, 2014

University of Mississippi Medical Center
Norman C. Nelson Student Union

Jackson, Mississippi

Name	Organization/School
Ainsley Scott	Tougaloo College
Joshua Agee	Tougaloo College
Tatyana Givens	Jackson State University
Anthony Keyes	Jackson State University
VADIVEL DEVARAJU	Radiology / UMMC
Carlos Moreno	Emory University
Willie J. Johnson	Men in Blacks Blue (Samuel Chapel)
Helen Johnson	CHARP
Roy J. Duke'	UMMC
Xinchun Zhau	UMMC Pathology
Madhu Kollareddy	Cancer Institute (UMC)
Zuwamys I. Carrero	" "
Donald Okoye	" "
Yolanda Knuckles	Stanford
Maurice A. Whalen, Sr	Visitor
Terri Whalen	Visitor
Radhika Pochampalli	UMMC.
Ophelia Carter	Visitor

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2014 Prostate Cancer Research Mini Symposium
Wednesday, July 30, 2014

University of Mississippi Medical Center
Norman C. Nelson Student Union

Jackson, Mississippi

Name	Organization/School
Britteny Martin	Jackson State
Ingrid Espinoza	Cancer Institute / UMMC
Crystal Weeks	UMMC CI / univ/edison
Vani Vijayakumar	UMC SOM / Radiology
Sakeli Hall	Jackson State University
Keki Xu	UMMC Cancer Inst.
Wen-Chey Chang	UMMC Cancer Inst.
Tsui-Ting Ho	UMMC Cancer Inst.
PK	UMMC Cancer Institute
Machelle Jones	Vistas / Tougaloo College
Zannel Blanchard	Cancer Inst.
Robert Rhodes	Vistas
Samira Grifoni	Cancer Institute
Maurice A. Whalen, Jr	Tougaloo college
Benjamin Bates	UMC
Swati Dhar	Cancer Institute, UMMC
Avinash Kumar	Cancer Institute, UMMC
John Sweet	Cancer Institute, UMMC



2014 Prostate Cancer Research Mini Symposium
Wednesday, July 30, 2014

University of Mississippi Medical Center
Norman C. Nelson Student Union

Jackson, Mississippi

Name	Organization/School
Diva Whaley	HBCU-UMMC / Tougaloo
Mahmud Hassan	UMC GC

2

2015 Prostate Cancer Research Mini Symposium

Sign-In Sheet

July 29, 2015
University of Mississippi Medical Center
Norman C. Nelson Student Union, Rooms A&B
Jackson, Mississippi

NAME	SIGNATURE	ORGANIZATION/AFFILIATION
Atfi, Dr. Azeddine		
Beech, Dr. Bettina		
Brown, Timera	[signature]	HBCU Prostate Cancer Research
Bruce, Dr. Marino		
Dodd, Latania	Latania Dodd	Fannie Lou Hamer Cancer Foundation
Duhé, Dr. Roy	Roy J. Duhé	UMMC Cancer Institute
Ekunwe, Adesuwa	present	
Ekunwe, Dr. Stephen	[signature]	JSU CSET-BIOLOGY
ElShamy, Dr. Wael		
Espinoza, Dr. Ingrid	Ingrid Espinoza	UMMC - Cancer Inst.
Fields, Deion	[signature]	HBCU PCRP

PCR Sign-In Sheet 1

NAME	SIGNATURE	ORGANIZATION/AFFILIATION
Garcia, Angel	Angel Garcia	
Gomez, Dr. Christian	present	
Granger, Dr. Joey		
Hamilton, Dr. R. Darryl		
Hassan, Dr. Mohamed	present	
Henegan, Dr. John		
Hennington, Dr. Bettye		
Hicks, Dr. Chindo		
Johnson, Freddie White		
Kannuthurai, Vijay		
Keyes, Jamal		
Lage, Dr. Janice		
Levenson, Dr. Anait	Anaelevenson	Cancer Institute

PCR Sign-In Sheet 2

NAME	SIGNATURE	ORGANIZATION/AFFILIATION
Lewin, Dr. Jack		
Mao, Dr. Jinghe	Jinghe Mao	Tougaloo College
McGinnis, Dr. Richard		
Mo, Dr. Yin-Yuan		UMMC
Ogunbe, Dr. Ifedayo		
Packianathan, Dr. Satya		
Pasco, Dr. David		
Phillips, Charles		HBCU UMMC PCRP
Pochampally, Dr. Radhika		VMMC
Pound, Dr. Charles		
Powell, Dr. Isaac		
Puneky, Dr. Louis		
Ratliff, Preston		Fannie Lou Hamer Cancer Foundation

PCR Sign-In Sheet 3

NAME	SIGNATURE	ORGANIZATION/AFFILIATION
Raucher, Dr. Drazen		
Rogers, Deirdre		
Romero, Dr. Damien		
Ryan, Dr. Michael		
Sakiyama, Marcelo	Marcelo Sakiyama	C. I.
Sheehan, Dr. Natalie		
Shirley, Terrence	Terrence M Shirley	
Subraumony, Dr. Charu		
Sullivan, Dr. Lisa		
Summers, Dr. Richard		
Surmeli, Amy	Amy Surmeli	
Tchounwou, Dr. Martha		
Tchounwou, Dr. Paul	Paul B Tchounwou	JSU

PCR Sign-In Sheet 4

NAME	SIGNATURE	ORGANIZATION/AFFILIATION
Turner, Timothy		JSU Biology
Turpeau, Freda		
Vijayakumar, Dr. Srinivasan		OMMC CI
Vijayakumar, Dr. Vani		
Walker, Dr. Larry		
Xu, Keli Dr.		UMMC CI
Zabaleta, Dr. Jovanny		LSU HSC - Peds - Genetics
Zhou, Dr. Xinchun		

2015 Prostate Cancer Research Mini Symposium

Sign-In Sheet

July 29, 2015
University of Mississippi Medical Center
Norman C. Nelson Student Union, Rooms A&B
Jackson, Mississippi

NAME	ORGANIZATION/AFFILIATION
Sakea Hsu	
Wen-Cheng Chung	Cancer Institute
[illegible]	Cancer Institute
Xu Zhang	Cancer Institute
Clement Peddy	Jackson State
Yuefeng Wang	Rad Onc
Chandler Lee	student, Ole Miss
Erin Hudnall	student, Ole Miss
Mundra Eswara Kumar	Rad onc, Fellow
Jeanann Suggs	Rad Onc Resident
Rahul Bhandari	Rad onc Resident
Krishna Chauhan	UMC Cancer Inst.
Tom Thomas MD	Rad onc fellow
Lynette Ekunwe	Jackson Heart Study
Jamil Hall	IHS
Vijay Kanmuthuraj	School of Med.

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2015 Prostate Cancer Research Mini Symposium

Sign-In Sheet

July 29, 2015
University of Mississippi Medical Center
Norman C. Nelson Student Union, Rooms A&B
Jackson, Mississippi

	NAME	ORGANIZATION/AFFILIATION
1	[illegible] MD	UMC / KARMANOS Cancer Ctr
2	Subhi Talal Younes	School of Medicine (M2)
3	Divya Shenoy	" "
4	Gloria Emily	CI
5	Jamal Keyes	HBCU
6	Adesuwa Ekunwe	HBCU
7	Vennica Mayes	Cancer Institute
8	Juan Li	Cancer Institute
9	Hairong Lin	cancer institute
10	Krishna C Vallabhaneni	Cancer Institute
11	VADIVEL DEVARAJU	Radiology
12	RODA, MANOHAR	Radiology
13	Cynthia Wall	CI
14	Tsui-Ting Ho	CI.
15	SAMIRA GRIFFIN	UMMC - CI
16	SHANKAR GIRI	Rad. Onc

2015 Prostate Cancer Research Mini Symposium

Sign-In Sheet

July 29, 2015
University of Mississippi Medical Center
Norman C. Nelson Student Union, Rooms A&B
Jackson, Mississippi

NAME	ORGANIZATION/AFFILIATION
Ryan JIMENEZ	School of Medicine
Avinash Kumar	Cancer Institute
Nasir Butt	Cancer Institute
Swati Dhar	Cancer Institute
Jung Su Ryu	Biochemistry
Lianna Li	Tougaloo College
Richard Summers	
Prathrosh Koiralu	Biochemistry/cancer Lol Ins.

MEETING SIGN-IN SHEET

Project:	2016 Mississippi Prostate Cancer HBCU Undergraduate Research Training Program Symposium	**Meeting Date:**	3 August 2016
Facilitator:	Dr. Christian Gomez	**Place/Room:**	R153

Name	University / College / Company	E-Mail
1. Diva Whalen	Mechanny Medical	dwhalne live.com
2. Cynthia Neese	UMMC CI	
3. Amit Reddy	UMMC	areddy2@umc.edu
4. Andrew Day	UMMC	lsday@umc.edu
5. S. Vijayakumar	UMMC CI	Svijayakum@umc.edu
6. Christian Gomez	UMMC CI	cmgomez@umc.edu
7. Amani Bailey	UMMC / JSU	azbailey@umc.edu
8. Vani Vijayakumar	UMMC	Vijayakuman@umc.edu
9. Pier Paolo Claudio	UMMC	PCLAUDIO@UMC.EDU
10. Abbye Baskin	UMMC	Abnskti@umc.edu
11. Ingrid Espinoza	UMMC / Cancer Inst.	iespinoza@umc.edu
12. O. Amoah	UMMC / JSU	ornellaamaoha@gmail.co
13. Tim Turner	Jackson State Univ	timothy.turner@jsums.edu
14. Shirley	UMC	TShirley@UMC.Edu

Name	University / College / Company	E-Mail
15. ELDRIN BHANAT	UMC	eldrin.bhanat@umc.edu
16. MARCELO JUN SAKIYAMA	UMMC / CI	msakiyama@umc.edu
17. Vennica Mayes	UMMC / Cancer Institute	Vmayes@umc.edu
18. Courtney Mangum	UMMC / Tougaloo	courtmangum@gmail.com
19. Linda Eastham	UMMC / Ole Miss	leastham@umc.edu
20. Keli Xu	UMMC / CI	KXu@umc.edu
21. Flavia De Carlo	UMC	fdecarlo@umc.edu
22. Roy J. Duhé	UMMC	RDUHE@umc.edu
23. Nasir Butt	UMMC/CI	NButt@umc.edu
24. Jyoti Mann	Tougaloo	Jmann@tougaloo.edu
25. Pinku Paesmar	UMC	rpaesmar@umc.edu
26. Gloria Guilty	UMMC	
27. Xu Zhang	UMMC	xzhang2@umc.edu
28. Mohamed El Gassim	UMC	
29. Mazie & Robert Whalen		
30. Clark Henegan	UMMC / CI	jhenegan@umc.edu

Name	University / College / Company	E-Mail
31. Sara La Palombara	Visitor	Saralapalombara@yahoo.it
32. Zhiying May	UMMC	Zzheng@umc.edu
33. Richard McGinnis	Tougaloo	rmeginnis@tougaloo.edu
34. Wen-Cheng Chung	UMMC	wchung@umc.edu
35. Candela Diez	UMMC	cdiezgomez@umc.edu
36. Yolanda Nobles	UMMC	ynobles@umc.edu
37. Nikita Whalen	UMMC	nwhalen@gmail.com
38. Willie Golidy	UMMC	wgolidy@umc.edu
39. Terri Whalen	Vistor	—
40. [illegible]	UMMC	—
41. Xiao Zhang	UMMC	xzhang3@umc.edu
42.		
43.		
44.		
45.		
46.		

	Name	University / College / Company	E-Mail
47.	Hamza Patel	University (UMMC)	hamza.g.patel@vanderbilt.edu
48.	Abednego Nii Adom Commey	Tougaloo College	nii.adom@yahoo.com
49.	Quest L Whalen	Tuskegee University	quest.whalen@gmail.com
50.			
51.			
52.			
53.			
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62.			

Appendix #7: Speakers pictures

2014 Prostate Cancer Research Mini Symposium



Mississippi Prostate Cancer HBCU Undergraduate Research Training Program Class of 2014. Depicted are from left to right Kounosuke Watabe, Ph.D., Anthony Keyes, Xinchun Zhou, M.D., Joshua Agee, Brittany Martin, Christian Gomez, Ph.D., Tatyana Givens, Chindo Hicks, Ph.D., Srinivasan Vijayakumar, M.D., Diva Whalen, Anait Levenson, M.D., Ph.D., Yin-yuan Mo, Ph.D. and Ansley Scott.

2015 Prostate Cancer Research Mini Symposium



Undergraduate students participating in the second HBCU Prostate Cancer Research Training Program completed their 10-week summer internship this past week by making presentations at the 2015 Prostate Cancer Research Mini Symposium. The students, from Jackson State University and Tougaloo College, with UMMC representatives, are front, from left, Angel Garcia, Tougaloo; Deion Fields, JSU; Jamal Keyes, JSU; Adesuwa Ekunwe, JSU; and Timera Brown, Tougaloo; back, from left; Dr. Christian Gomez, UMMC cancer researcher, associate professor and HBCU program advisor; Dr. Richard Summers, UMMC associate vice chancellor for research; Dr. Srinivasan Vijayakumar, Cancer Institute director; and Charles Phillips, Tougaloo.

2016 Prostate Cancer Research Mini Symposium

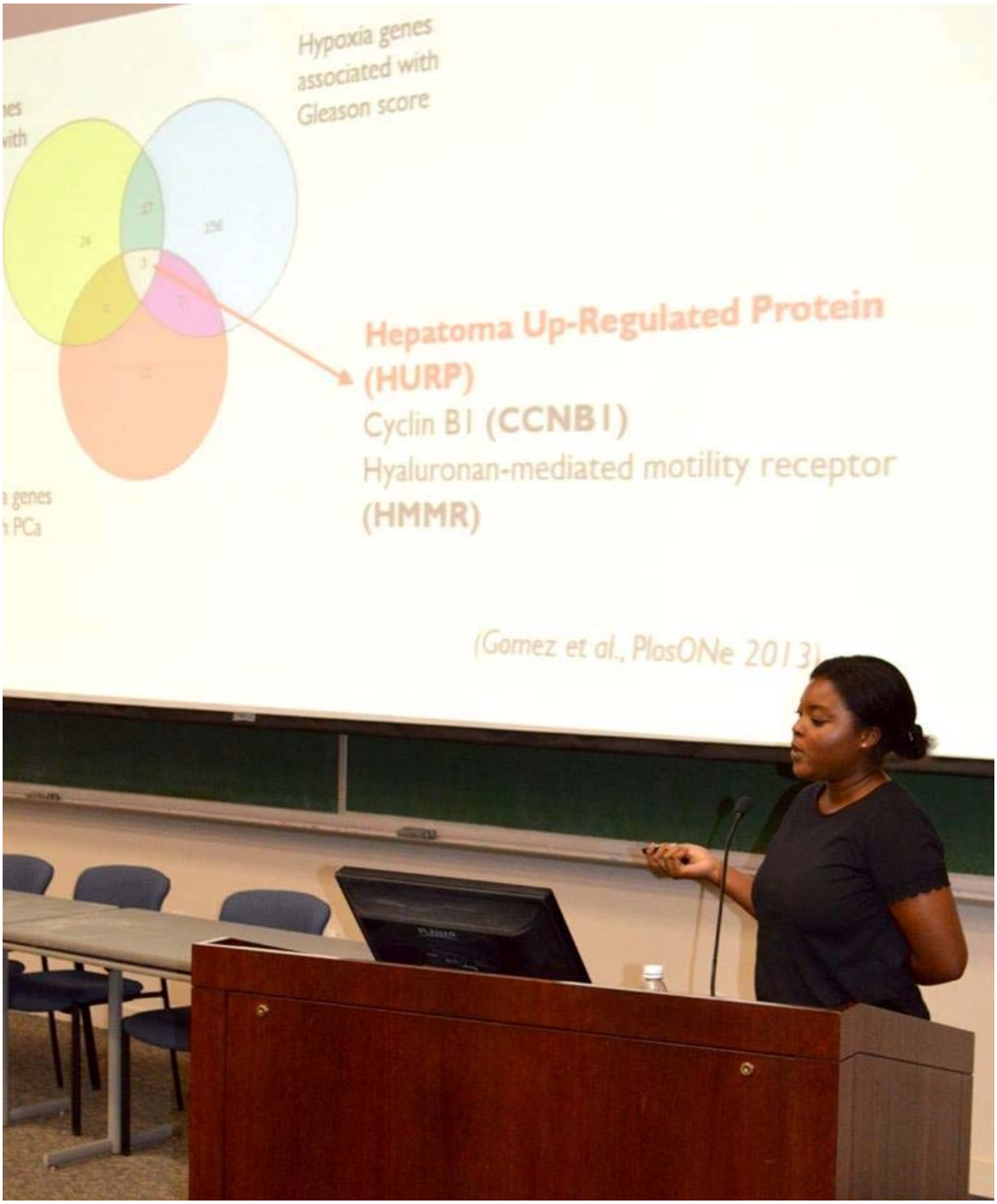
Speakers: Timothy Turner, Ph.D., Ornella Amoah (Class of 2016), Christian Gomez, Ph.D. (Program Director), Courtney Mangum (Class of 2016), Diva Whalen, M.S. (Class of 2014), Jinghe Mao, Ph.D., and Keli Xu, Ph.D.



Roy Duhe, Ph.D. (UMMC-Cancer Institute Associate Director of Cancer Education and UMMC-HBCU PCa Training Program advisory board member), Christian Gomez, Ph.D., (Program Director), Speakers: Jinghe Mao, Ph.D., Courtney Mangum (Class of 2016), Ornella Amoah (Class of 2016) and Srinivasan Vijayakumar, M.D.



Ornella Amoah (Class of 2016) presenting at 2016 Prostate Cancer Research Mini Symposium



Appendix #8: Summer Students Activities Related to SURE Program

2014

School of Graduate Studies in the Health Sciences

Summer Research Seminar Schedule 2014
NOON

1. **May 30 (Classroom Wing Room CW308)**
   Safety Issues

2. **June 6 (Upper Amphitheater—Room R354)**
   Mike Ryan - Physiology

3. **June 13 (Upper Amphitheater—Room R354)**
   Jennifer Sasser - Pharmacology

4. **June 20 (Upper Amphitheater—Room R354)**
   Sean Didion and MD/PhD Students

5. **June 27 (Upper Amphitheater—Room R354)**
   Amol Janorkar- Biomedical Materials Science

6. **July 4---No Seminar**

7. **July 11 (Upper Amphitheater—Room R354)**
   Damian Romero - Biochemistry

8. **July 18 (Upper Amphitheater—Room R354)**
   Lique Coolen - Neuroscience

9. **July 25 (Upper Amphitheater—Room R354)**
   Mary Marquart - Microbiology

10. **August 1 Symposium (Student Union---Upstairs)**

SAFETY SEMINAR
May 30, 2014
CW308 Classroom Wing

Name:	**Amanda Kinslow**
Title:	**IACUC Training Coordinator**
Department:	**Pathology, LAF (Laboratory Animal Facility)**
Topics:	**Rules and Regulations governing the Privilege of Using Live Animals in Research**
Time needed:	10-15 minutes

Name:	**Yolanda Griffin**
Title:	**Biological Safety Officer**
Department:	**Environmental Health and Safety**
Topics:	**Blood Borne Pathogens, Hazardous Material and Lab Safety**
Time needed:	10 minutes

Name:	**Vicky Tygart**
Title:	**Supervisor and Safety Officer**
Department:	**Environmental Health and Safety**
Topics:	**General Safety, Fire safety procedures and Use of Fire Extinguishers**
Time needed:	10 minutes

Names:	**Vicky Tygart, Supervisor and Safety Officer**
Department:	**Environmental Health and Safety**
Topics:	**Radiation Safety and Laser Safety**
Time needed:	20 minutes

2015

School of Graduate Studies in the Health Sciences

Summer Research Seminar Schedule 2015
All Seminars will be held at Noon
Symposium time is TBD

1. **May 29 (Upper Amphitheater—Room R354)**
   Safety Issues

2. **June 5 (Upper Amphitheater—Room R354)**
   Mike Ryan - Physiology

3. **June 12 (Upper Amphitheater—Room R354)**
   Jennifer Sasser - Pharmacology

4. **June 19 (Upper Amphitheater—Room R354)**
   Eva Bengten - Microbiology

5. **June 26 (Upper Amphitheater—Room R354)**
   Amol Janorkar- Biomedical Materials Science

6. **July 2 (Thursday--Upper Amphitheater—Room R354)**
   Damian Romero - Biochemistry

7. **July 10 (Upper Amphitheater—Room R354)**
   Sean Didion and MD/PhD Students

8. **July 17 (Upper Amphitheater—Room R354)**
   Donna Platt - Neuroscience

9. **July 24 (Upper Amphitheater—Room R354)**
   Ryan Darling – Clinical Anatomy

10. **July 31 Symposium (Student Union---Upstairs)**
    Student Poster and Oral Presentations

SAFETY SEMINAR
May 29, 2015
R354 Classroom Wing

Name:	**Amanda Kinslow**
Title:	**IACUC Training Coordinator**
Department:	**Pathology, LAF (Laboratory Animal Facility)**
Topics:	**Rules and Regulations governing the Privilege of Using Live Animals in Research**
Time needed:	10-15 minutes

Name:	**Yolanda Griffin**
Title:	**Biological Safety Officer**
Department:	**Environmental Health and Safety**
Topics:	**Blood Borne Pathogens, Hazardous Material and Lab Safety**
Time needed:	15 minutes

Name:	**Jeff Pinter**
Title:	**Fire Safety Specialist**
Department:	**Environmental Health and Safety**
Topics:	**General Safety, Fire safety procedures and Use of Fire Extinguishers**
Time needed:	15 minutes

Name:	**Dale Tallman**
Title:	**Safety Officer, Radiation/Laser**
Department:	**Environmental Health and Safety**
Topics:	**Radiation Safety and Laser Safety**
Time needed:	15 minutes

The UMMC School of Graduate Studies
in the Health Sciences
presents

Making the Case for Graduate School

Monday, June 8, 2015 at 3:00 pm in R153



Presented by

Howard G. Adams, Ph.D.

Founder and President of H.G. Adams & Associates, Inc.

A leading expert on mentoring and mentorship program development and has written, lectured, and consulted extensively on career, educational, personal, and professional development.

Please direct questions to Mary Canterbury at mcanterbury@umc.edu

2016

School of Graduate Studies in the Health Sciences

DISCOVERY U

Summer Research Seminar Schedule

2016

June 3 (Safety Seminar—Room R153)

June 10 (Upper Amphitheater—Room R354)
Dr. Sean Didion (MD/PhD Program)

June 17 (Upper Amphitheater—Room R354)
Dr. Jan Williams (Pharmacology Program)

June 24 (Upper Amphitheater—Room R354)
Dr. Maureen Wirschell (Biochemistry Program)

July 1 (Lower Amphitheater—Room R153)
Dr. Michael Ryan (Physiology Program)

July 8 (Upper Amphitheater—Room R354)
Dr. Donna Platt (Neuroscience Program)

July 15 (Upper Amphitheater—Room R354)
Dr. Ryan Darling (Clinical Anatomy Program)

July 22 (Upper Amphitheater—Room R354)
Dr. Stephen Stray (Microbiology and Immunology)

July 29 (Upper Amphitheater—Room R354)
Dr. Amol Janorkar (Biomedical Materials Science Program)

August 5 Symposium—(Student Union)

SAFETY SEMINAR
June 3, 2016
R153 Lower Amphitheater

Name:	**Amanda Kinslow**
Title:	**IACUC Training Coordinator**
Department:	**Pathology, LAF (Laboratory Animal Facility)**
Topics:	**Rules and Regulations governing the Privilege of Using Live Animals in Research**
Time needed:	10-15 minutes

Name:	**Yolanda Griffin**
Title:	**Biological Safety Officer**
Department:	**Environmental Health and Safety**
Topics:	**Blood Borne Pathogens, Hazardous Material and Lab Safety**
Time needed:	15 minutes

Name:	**Jeff Pinter**
Title:	**Fire Safety Specialist**
Department:	**Environmental Health and Safety**
Topics:	**General Safety, Fire safety procedures and Use of Fire Extinguishers**
Time needed:	15 minutes

Name:	**Dale Tallman**
Title:	**Safety Officer, Radiation/Laser**
Department:	**Environmental Health and Safety**
Topics:	**Radiation Safety and Laser Safety**
Time needed:	15 minutes

Appendix #9: SURE Social Activities Program

2014





2015


Networking
Game Night
Wednesday, June 10, 2015
4:30 pm
Student Union Gymnasium
All Summer Research Students are invited
Food and drinks
will be provided


Bowling Night
Fannin Lanes
Wednesday, July 29, 2015
6:00 pm – 8:00 pm

2016


Please join us for the
Summer Undergraduate Research
Welcome Supper
Thursday, June 2, 2016
4:30 pm
On the 2nd floor of the
Norman C. Nelson Student
Union
Sponsored by the School of Graduate Studies
in the Health Sciences
Alumni Chapter


Hey batter, batter!
Summer Research
Softball Game
Wednesday, June 29th
7:00-8:30 pm
Liberty Park Fields in Flowood


Networking
Game Night
Wednesday,
june 8
4:30 pm
Student union gymnasium


B O W L
STRIKE
up some
Summer Research fun at
Bowling Night!
Wednesday, July 27
5:00 pm
Food & drinks will be provided
Fannin Lanes

Appendix #10: Summer Research Symposium Program

2014



School of Graduate Studies in the Health Sciences
Summer Research Symposium
August 1, 2014

Welcome……**Dr. Michael Ryan**
Co-Director, Discovery U Program

Mary Canterbury
Program Administrator, Discovery U Program

	Name	Department	Mentor
1	**Ashley King**	Biomedical Materials Science	Dr. Denise Krause
2	**Niketa Thompson**	Biomedical Materials Science	Dr. Denise Krause
3	**Rochelle Corbitt**	Anatomy	Dr. Doug Vetter/ Dr. Kathleen Yee
4	**LeAndrea Mitchell**	Anatomy	Dr. Doug Vetter/ Dr. Kathleen Yee
5	**Courtney Sims**	Microbiology	Dr. Mary Marquart
6	**Jessica McKenzie**	Pharmacology	Dr. Babbette LaMarca
7	**Orianna Odell**	Cancer Institute	Dr. Anait Levenson
8	**Diva Whalen**	Cancer Institute	Dr. Anait Levenson
9	**Donald O'koye**	Biochemistry	Dr. Luis Martinez
10	**Brianca Fizer**	Pharmacology	Dr. Jan Williams
11	**Tre Taliaferro**	Physiology	Dr. Lique Coolen
12	**Arthi Reddy**	Neuroscience	Dr. Lique Coolen
13	**Sallie Lin**	Physiology	Dr. Lique Coolen
14	**Claresa Youngblood**	Microbiology	Dr. Larry McDaniel
	10-minute Break		
15	**Ben Melancon**	Biochemistry	Dr. Radhika Pochampally
16	**Kelli Hartman**	Biochemistry	Dr. Drazen Raucher

	Name	Department	Mentor
17	**Logan Didier**	Biomedical Materials Science	Dr. Michael Roach
18	**Ian Blakely**	Biomedical Materials Science	Dr. Michael Roach
19	**Justin Mathew**	Biomedical Materials Science	Dr. Amol Janorkar
20	**Rodney Kipchumba**	Biomedical Materials Science	Dr. Amol Janorkar
21	**Laney Casella**	Biomedical Materials Science	Dr. Amol Janorkar
22	**Alexis Huddleston**	Microbiology	Dr. Chris Meade
23	**Skyler Gordon**	Physiology	Dr. Heather Drummond
24	**Olivia McNeal**	Physiology	Dr. Barbara Alexander
25	**Katarina Pittman**	Physiology	Dr. David Stec
26	**Sydney Clark**	Pathology	Dr. Julius Cruse
27	**Cindy Nguyen**	Biochemistry	Dr. Yin-yuan Mo
28	**Ansley Scott**	Cancer Institute	Dr. Yin-yuan Mo
29	**Anthony Keyes**	Cancer Institute	Dr. Drazen Raucher
30	**Brittany Martin**	Cancer Institute	Dr. Christian Gomez
31	**Joshua Agee**	Cancer Institute	Dr. Xinchun Zhou
32	**Tatyana Givens**	Cancer Institute	Dr. Chindo Hicks
33	**John Suedel**	Biochemistry	Dr. Wael Elshamy
34	**Taylor Moehling**	Neuroscience	Dr. Junming Wang
35	**Bria Burt**	Microbiology	Dr. Ashley Robinson
36	**Alexis Himel**	Physiology	Dr. Joey Granger
37	**Bijal Patel**	Biochemistry	Dr. Damian Romero
38	**Sherman Jones**	Neuroscience	Dr. Donna Platt/ Dr. James Rowlett
39	**Jessica Milner**	Neuroscience	Dr. Susan Warren/ Dr. Paul May
40	**Anna Marie Dulaney**	Microbiology	Dr. Mary Marquart
41	**Andrew Asante**	Microbiology	Dr. Ritesh Tandon
42	**Daniel Glover**	Microbiology	Dr. Ritesh Tandon
43	**Jeremiah Reese**	Microbiology	Dr. Eva Bengten

Name	Department	Mentor
10-minute Break		
44 **Caleb Reese**	Biochemistry	Dr. Lee Bidwell
45 **Brittnei Earl**	Pharmacology	Dr. Jenny Sasser
46 **Graham Husband**	Physiology	Dr. Robert Hester
47 **Akil Strawder**	Physiology	Dr. Mike Ryan
48 **Kevin Garmin**	Physiology	Dr. Eric George
49 **Christian Bruno**	Physiology	Dr. Mike Ryan
50 **Akriti Kaur**	Neuroscience	Dr. Craig Stockmeier
51 **Camilla Wright**	Neuroscience	Dr. Lir-Wan Fan
52 **DesTenee Green**	Pharmacology	Dr. Jan Williams
53 **Max Schwam**	Microbiology	Dr. Chris Meade
54 **Matt Mosley**	Biochemistry	Dr. Maureen Wirschell
55 **Amit Tzivion**	Biochemistry	Dr. Azeddine Atfi
56 **Morgan LeDoux**	Biochemistry	Dr. Parminder Vig
57 **Muz Khawaja**	Neuroscience	Dr. Kevin Freeman

DISCOVERY U ADMINISTRATION

Dr. Joey Granger, Dean
School of Graduate Studies in the Health Sciences

Dr. Mike Ryan, Associate Dean
Co-Director Discovery U Program

Dr. Mike Garrett, Co-Director
Discovery U Program

Mary Canterbury, Program Administrator
Discovery U Program

Discovery U Support Staff
Danice Miller
Shanna Moulds

ACKNOWLEDGEMENT

A very special thanks to all of the students and mentors who participated in the Summer Research Programs.

2015

SUMMER UNDERGRADUATE RESEARCH SYMPOSIUM

DISCOVERY

UMMC SCHOOL OF GRADUATE STUDIES IN THE HEALTH SCIENCES

JULY 31, 2015
Norman C. Nelson Student Union

SUMMER UNDERGRADUATE RESEARCH SYMPOSIUM
JULY 31, 2015

9:00 - 9:30 **BREAKFAST RECEPTION**
Student Union Conference Center

9:30 - 12:00 **ORAL PRESENTATIONS**
Student Union Conference Center

1. Andrew Asante
Microbiology - Ritesh Tandon

2. Nathan Campbell
Pharmacology - Babbette LaMarca

3. Jackson Coole
Biochemistry - Michael Hebert

4. Sherman Jones
Neuroscience - Donna Platt/James Rowlett

5. Jamal Keyes
Cancer Institute - Drazen Raucher

6. Alana Kron
Radiology - Andrew Smith

7. David Lee
Biomedical Materials Science
Michael Roach

8. Destiny Mitchell
Physiology - Romain Harmancey

9. Aaron Blocker
Microbiology - Larry McDaniel

10. Courtney Harrison
Biochemistry - Maureen Wirschell

11. Jeanne Ishimwe
Pharmacology - Mallikarjuna Pabbidi

12. Nora Newcomb
Neuroscience - Lique Coolen

13. Charles Phillips
Cancer Institute - Yin-Yuan Mo

14. Faizan Tahir
Radiology - Andrew Smith

15. Evan Theilman
Biomedical Materials Science
Yuan Yuan Duan

16. Erin Wilson
Physiology - Joey Granger

12:00 - 1:00 **LUNCHEON**
By Invitation Only - Student Union Conference Center

1:00 - 2:30 **POSTER PRESENTATIONS/DESSERT RECEPTION**
Student Union Conference Center

1. Anna Adorno
CHS - Hamed Benghuzzi

2. Marina Ali
Biochemistry - David Brown

3. Andrew Asante
Microbiology - Ritesh Randon

4. Kandice Bailey
Biochemistry - Parminder Vig

5. Allison Barnes
Neuroscience - Kedra Wallace

6. Anna Bicker
Microbiology - Larry McDaniel

POSTER PRESENTATIONS (cont.)

7. Estelle Blair
Physiology - Joey Granger

8. Aaron Blocker
Microbiology - Larry McDaniel

9. Nicholas Bohannon
Physiology - Barbara Alexander

10. Latoya Brantley
Pharmacology - Stan Smith

11. Timera Brown
Cancer Institute - Xinchun Zhou

12. Joshua Campbell
Neuroscience - Kedra Wallace

13. Nathan Campbell
Pharmacology - Babbette LaMarca

14. Ashley Carson
Microbiology - Chris Meade

15. Graham Casey
Neuroscience - Lique Coolen

16. Ron Cassada
Neuroscience - Ian Webb

17. Jackson Coole
Biochemistry - Michael Hebert

18. Robert Cragon
Pharmacology - Mallikarjuna Pabbidi

19. Ramanda Dace
Biochemistry - Radhika Pochampally

20. Davesha Doty
Radiology - Andrew Smith

21. Adesuwa Ekunwe
Cancer Institute - Anait Levenson

22. Deion Fields
Cancer Institute - Keli Xu

23. Austin Finney
Biochemistry - Drazen Raucher

24. Christopher Fisher
Pharmacology - Sydney Murphy

25. Sarah Fitzgerald/Annie Hou
Biomedical Materials Science - Amol Janorkar

26. Brianca Fizer
Pharmacology - Jan Williams

27. Jasmeka Foster
Neuroscience - Ian Paul

28. Angel Garcia
Cancer Institute - Christian Gomez

29. Caroline Garraway
Neuroscience - Junming Wang

30. DesTenee Green
Pharmacology - Jan Williams

31. Devin Guillory
Neuroscience - Ian Paul

32. Kelli Gutter
Medicine - Donna Sullivan

33. Courtney Harrison
Biochemistry - Maureen Wirschell

34. Jordan Hester
Physiology - Drew Pruett

35. Cecil Hill, Jr.
OB/GYN - Kedra Wallace

36. Trianna Humphrey
Pharmacology - Stan Smith

37. Michayla Hunter
Medicine - Donna Sullivan

38. Carley Hydrick
Neuroscience - Ian Paul

39. Jeanne Ishimwe
Pharmacology - Mallikarjuna Pabbidi

40. Javarcia Ivory
Physiology - Joey Granger

POSTER PRESENTATIONS (cont.)

41. Sherman Jones
Neuroscience - Donna Platt/James Rowlett

42. Jamal Keyes
Cancer Institute - Drazen Raucher

43. Alana Kron
Radiology - Andrew Smith

44. Tracey Thuy Phuong Le
Biochemistry - Radhika Pochampally

45. David Lee
Biomedical Materials Science
Michael Roach

46. Chloe McCarthy
Microbiology
Chris Meade

47. Jessica McKenzie
Pharmacology - Babbette LaMarca

48. Douglas McLaurin
Physiology - Heather Drummond

49. Destiny Mitchell
Physiology - Romain Harmancey

50. Nora Newcomb
Neuroscience - Lique Coolen

51. ThuyVi Nguyen
Radiology - Andrew Smith

52. Casey Park
Biochemistry - Damian Romero

53. Charles Phillips
Cancer Institute - Yin-Yuan Mo

54. Katarina Pittman
Physiology - David Stec

55. Ta'Shariah Robinson
Pharmacology - Jenny Sasser

56. Abdullah Shaheen
Neuroscience - Junming Wang

57. De'Aries Shannon
Physiology - Merry Lindsey

58. Redin Spann
Neuroscience - Bernadette Grayson

59. Akil Strawder
Physiology - Mike Ryan

60. Faizan Tahir
Radiology
Andrew Smith

61. Evan Theilman
Biomedical Materials Science
Yuan Yuan Duan

62. Eliza Thomas
Microbiology - Mary Marquart

63. Givanta Tribit
Microbiology - Chris Meade

64. Emily Turbeville
Neuroscience - Lir-Wan Fan

65. Erin Wilson
Physiology - Joey Granger

66. Logan Wilson
Physiology - Eric George

67. Shenequa Wilson
OB/GYN - Kedra Wallace

68. Judson Womack
Pharmacology - Jan Williams

69. Yoni Youn
Neuroscience - Eric Vallender

70. Austin Zamarripa
Neuroscience - Bernadette Grayson

A very special thank you to all of the mentors, postdocs and graduate students who guided the summer undergraduate researchers during the summer of 2015.

2016


UMMC
School of Graduate Studies
in the Health Sciences
SUMMER
UNDERGRADUATE
RESEARCH
SYMPOSIUM
August 5, 2016
Norman C. Nelson Student Union

POSTER PRESENTATIONS (cont.)

31. Rachel Pearson
Microbiology - Larry McDaniel

32. Alyssa Pennington
Pharmacology - Jan Williams

33. Jaren Reeves-Darby
Neuroscience - Donna Platt

34. Austin Slone
Neuroscience - James Rowlett

35. Jesse Smith
Neuroscience - Ray Grill

36. Evan Theilman
BMS - Jason Griggs

37. Adam Travis
BMS - Amol Janorkar

38. Olivia Travis
Pharmacology - Richard Roman

39. Emily Turbeville
Neuroscience - Lir Wan Fan

40. Amanda Williams
Pharmacology - Jenny Sasser

41. London Williams
Physiology - Eric George

REMEMBER TO APPLY FOR OUR PROGRAMS IN:

PhD Degrees

Biochemistry
Biomedical Materials Science
Clinical Anatomy
Medical Pharmacology
Microbiology and Immunology
Neuroscience
Nursing
Pathology
Physiology and Biophysics

MS Degrees

Biomedical Materials Science
Biomedical Sciences
Clinical Anatomy
Clinical Investigation
Pathology

Please visit our webpage: **www.umc.edu/graduateschool/**

A very special thank you to all of the mentors, postdocs and graduate students who guided the summer undergraduate researchers during the summer of 2016.

SUMMER UNDERGRADUATE RESEARCH SYMPOSIUM
August 5, 2016

Program Director.....Dr. Mike Ryan

Program Administrators.....Mary Canterbury and Dorothea Staursky

9:00 - 9:30 **BREAKFAST RECEPTION**
Student Union Conference Center

9:30 - 12:00 **ORAL PRESENTATIONS**

1. Nathan Campbell
Pharmacology - Babbette LaMarca

2. Nick Bohannon
Physiology - Barbara Alexander

3. Stephanie Njemanze
Biochemistry - Damian Romero

4. Olivia Travis
Pharmacology - Richard Roman

5. Ashley Max
BMS - Michael Roach

6. Chelsea Luckett
Physiology - Ji Li

7. Evan Theilman
BMS - Jason Griggs

8. Ornella Amaoh
Cancer Institute - Christian Gomez

9. Douglas Campbell
Microbiology - Stephen Stray

10. Courtney Mangum
Cancer Institute - Keli Xu

11. Amanda Blackwell
Neuroscience - James Shaffery

12. Rachel Pearson
Microbiology - Larry McDaniel

13. Sam Palmer
Clinical Anatomy - Dongmei Cui

14. Jaren Reeves-Darby
Neuroscience - Donna Platt

15. Liam Armstrong
Pathology - Xiu Liu

12:00 - 1:00 **LUNCHEON**
By Invitation Only - Student Union Conference Center

1:00 - 2:30 **POSTER PRESENTATIONS/DESSERT RECEPTION**
Student Union Conference Center

1. Ornella Amaoh
Cancer Institute - Christian Gomez

2. Nandini Aravindan
Neuroscience - Bernadette Grayson

3. Liam Armstrong
Pathology - Xiu Liu

4. Amanda Blackwell
Neuroscience - James Shaffery

5. Nick Bohannon
Physiology - Barbara Alexander

6. Parker Brewster
Radiology - Andrew Smith

7. Nathan Campbell
Pharmacology - Babbette LaMarca

8. Douglas Campbell
Microbiology - Stephen Stray

9. Julius Chembo
Physiology - Mike Ryan

10. Lan Chen
Neuroscience - Hong Zhu

11. Josh Cotton
Pharmacology - Sydney Murphy

12. Anthony Covacevich
Pathology - Xiu Liu

13. Charles Davis
Microbiology - Mary Marquart

14. Braxton Dupuy
Neuroscience - Lique Coolen

15. Shelley Rae Edwards
Neuroscience - Kevin Freeman

16. Brianca Fizer
Pharmacology - Jan Williams

17. Ashley Gnam
Pharmacology - Denise Cornelius

18. Alex Griggs
Physiology - David Stec

19. Yang He
Microbiology - Melanie Wilson

20. Bo Key
BMS - Jason Griggs

21. Mark Lewis
Pharmacology - Elise Gomez-Sanchez

22. Simone Lewis
Neuroscience - Paul May/Susan Warren

23. Chelsea Luckett
Physiology - Ji Li

24. Courtney Mangum
Cancer Institute - Keli Xu

25. Ashley Max
BMS - Michael Roach

26. Destiny Mitchell
Physiology - Romain Harmancey

27. Henry Nguyen
Microbiology - Ritesh Tandon

28. Stephanie Njemanze
Biochemistry - Damian Romero

29. Sam Palmer
Clinical Anatomy - Dongmei Cui

30. Jamie Paul
Neuroscience - Courtney Bagge

Ornella Amoah poster presentation at Summer Undergraduate Research Symposium 2016



Appendix #11: Final papers

2014

Creating long non-codingRNA Knockouts to Determine Function in Relation to Prostate Cancer

Scott, Ansley E.[1], and Mo, Yin Yuan[2,3,4]

[1]Tougaloo College; [2]School of Medicine, University of Mississippi Medical Center, Jackson, MS, [3]Cancer Institute, University of Mississippi Medical Center, Jackson, MS, [4]Department of Pharmacology and Toxicology , University of Mississippi Medical Center, Jackson, MS

Abstract

Dr. Mo's lab focus in the study of the role of non-coding RNAs (ncRNA) in cancer. Protein-coding genes are only a small part of the human genome, whereas the majority of transcripts are non-coding RNAs including long non-coding RNAs (lncRNAs). LncRNAs, are sequences with a size of over 200bp. Some of their functions include serving as molecular decoys and mediators in signaling pathways that regulate cell cycle, cellular differentiation, gene expression and translation. LncRNAs could play a critical role in regulation of cellular processes such as cell growth and apoptosis as well as cancer progression and metastasis. This study focused on making lncRNA knockouts to determine their relationship with prostate cancer. Briefly, lncRNA sequences were assigned and primers were then designed using different web pages, which included Human Blat Search, Web Map Preferences, and DNA 2.0 CRISPR gRNA Design Tool. Then, the amplification of the lnRNAs was performed using PCR and the DNA was visualized and extracted from agarose gel. Cloning was performed using a gRNA vector cut with the restriction enzyme SAP1, and both commercially made and labs made competent cells were used to amplify the plasmids. After cloning, colonies were selected from the agarose plate and grow in liquid media for amplification and later DNA extraction using standard lab procedures. The DNA concentration was measured using a nanodrop machine. Finally, the plasmid containing the gene was checked using restriction enzymes and visualization in agarose gels. Results showed an amplification and cloning of the specific knockouts lnRNAs. Thus, my contribution during this summer to Dr. Mo's research creating knockout lncRNA genes is part of the first step to future studies to determinate their relationship with the diagnosis, progression, or treatment of prostate cancer. The lab will next use the knockout genes that were made to perform *in vivo* experiments for prostate cancer.

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Thermal Manipulation of the Elastin-Like-Polypeptide P21-E1-Bac Increases the Therapeutic Peptide's Potency compared to the Parent Compound *in vivo*

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Abstract:

Dr. Rauche's lab have been working, for more than a decade, in generating better drug delivery systems using cell penetrating peptides (CPPs) to target tumor cells. These peptides have been used in conjunction with elastin-like polypeptides (ELPs) to increase the delivery of drugs to cancerous cells and tumors. ELPs are well known for their unique thermal responsive properties. Above the transition temperature, ELPs aggregate into solid globules, while below the transition temperature, ELPs are in solution. This thermal property create an effective drug delivery system that actively targets specific areas using local hyperthermia. Once the ELPs aggregate on the target site, the CPPs are responsible for entering the cells. In the cell, the drug can bind with targets to achieve a therapeutic effect. In this project working underneath my mentor Dr. Raucher with support from Dr. Watabe, I was able to test whether ELPs have any anti-proliferative effect on prostate cancer cells. First, the polypeptide chains conjugated to P21 peptide (P21-E1-Bac) or to a scrambled peptide (Scrambled P21-E1-Bac) were synthesized within BLR-*E. coli*. The proteins were extracted and then purified from *E. coli* using an established protein purification protocol from the lab. Then the antiproliferative effect of these peptides was determinated on metastatic prostate cancer cells (PC3MM) using a MTT assay. PC3MM cell line is a metastatic version of the PC3 human prostate cancer cell line. Results showed that at 37°C, P21-E1-Bac and the scrambled peptide have a similar antiproliferative effect on the cells. Nevertheless, at 42°C, P21-E1-Bac showed greater anti-proliferative effect at the low concentration of 10uM. As expected, the effect of P21-E1-Bac was higher at 42° C where the ELP was aggregated, compared to 37° C, where the ELP was still in solution. The drug delivery system established from using ELPs in tandem with CPPs is a very powerful approach when it comes to novel treatment ideas. Specifically for cancer, the thermal properties of ELPs allow for active targeting using High-intensity focused ultrasound. While heating a tumor, the ELP will only aggregate on that site in the body. Not only that, but ELPs are able to pass the Blood Brain Barrier, and allow for delivery of molecules that alone would not be able to penetrate such barrier. My studies have been *in vitro* and are at the beginning stages of creating an effective compound to combat prostate cancer. With animal studies being done by my mentor, Dr. Drazen Raucher, I have no doubt that ELPs will be able to make it to clinical studies.

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The Role of Hepatoma Up-Regulated Protein (HURP) in resistance to prostate cancer treatment

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Prostate Cancer (PCa) can be treated with radiation, chemotherapy, and hormonal therapy. Chemotherapy is a systematic treatment in which drugs are distributed throughout the body to kill cancerous cells. However, one of the limitations of chemotherapy is chemoresistance, which can be inherently attributed to cancer cells or extrinsically developed in response to treatment. Hepatoma Up-regulated Protein (HURP), a cell cycle regulated, microtubule associated protein has been reported in Dr. Gomez lab as an independent biomarker of aggressive PCa disease. Studies show when HURP is over expressed in LNCaP cells they are more resistant to chemo drugs *(El-Khattouti, A., Ma T and Gomez CR, unpublished observations)*. Additionally, analysis of key proteins involved in the modulation of pathways suggest that HURP increases chemo-resistance in PCa cells and has an oncogenic role in the development of PCa. These experiments support the notion that HURP is a factor of chemoresistance in PCa and allow us to predicate that cells with low levels of HURP will be less resistant to chemo drugs. The hypothesis underlining this project is the following: If HURP is silenced in PCa cells; they will be less resistant to chemotherapy drugs.

To test this hypothesis we utilized LnCaP cells infected with a lentiviral Tet-on inducible system for HURP short hairpin (sh)-RNA (shHURP LnCaP cells). Next cells were incubated with docetaxel, the antineoplastic chemo drug and anti-microtubule agent used to treat metastatic Prostate Cancer. Using an MTT Assay to measure the drug sensitivity on the cells, we observed a slightly increased resistance to docetaxel in cells with silenced HURP relative to control cell expressing normal levels of HURP [IC_{50} in shHURP-LNCaP (+Dox)= 0.18 (0.03-1.0) nM; IC_{50} in shHURP-LNCaP (-Dox)= 1.7 (1.24-2.36) nM]. Western blot analysis evidenced expressed that Docetaxel is more effective in HURP when doxycycline is added.

In Docetaxel treated LNCaP cells the silencing of HURP does not affect cell viability. At this point we do not have strong evidence to conclude that shHURP-LNCaP will be less resistant to Docetaxel treatment. If we demonstrate that HURP silencing reduces chemoresistance, we will be in better position to define the role of HURP as a factor of treatment resistance in PCa.

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The Effects of Synthetic Stilbenes on Metastasis Associated Protein 1 (MTA1) Levels in Prostate Cancer Cells

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Abstract:

Earlier findings discovered in Dr. Levenson's laboratory have shown that Resveratrol and Pterostilbene have an inhibiting effect on the tumor progression metastasis associated protein 1 (MTA1). Resveratrol and Pterostilbene (PTER) are natural compounds found in red wine and blueberries. These compounds are able to inhibit tumor progression by reducing the amount of MTA1 produced by the prostate cancer cells. This discovery is important; yet, because of low bioavailability and quick metabolism in the body, Resveratrol does not remain available long enough to effectively reduced in MTA1 levels in the body. On the other hand, PTER has a higher bioavailability because of its molecular structure. Thus, this study was designed to analyze the potency and effectiveness of PTER's derivatives against the protein MTA1. By treating the most aggressive prostate cancer cell line, prostate cancer bone metastasis 3 (PC3M), we hope to not only see a reduction in cancer cells which could translate into a reduction in MTA1 but also a stronger potency in lower concentration (<50μM/mL) which means a smaller amount of the compound could be administered. We analyzed the potency of all the compounds by growing the cells, creating protein lysates, and running two different western blots with the MTA1-a11 and MTA1 cell signaling antibody on each of the compounds. In future studies, we hope to study the effectiveness of the best derivatives in the other prostate cancer cell lines, brain metastatic cell line, DU145, and lymph node metastatic cell line, LNCaP. The compounds must be studied in these cell lines because these two cell lines show different characteristics such as the metastatic aggressiveness and sensitivity to a male hormone, androgen. We would continue investigating the pathways of compounds through proliferation assays so we can make sure that the MTA1 is being down regulated. After selecting the most potent compounds, the compounds would then be tested in a mice model whose body stimulates an aggressive form of prostate cancer.

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C-terminal of group 3 POTES correlates with the Progression of Prostate Cancer

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Prostate cancer is the second leading cause of cancer among men, so research in this area is very important so that we may find better treatments and eventually find a cure. The most common test is the Prostate Specific Antibody (PSA) test, which correlates with prostate cancer. However high PSA levels can also correlate patients with no malignant diseases such as prostatitis or benign prostate hyperplasia. Because of this, extensive research is taking place on trying to find more reliable biomarkers for prostate cancer. The POTE is a gene newly discovered by the NCI research team in an attempt to find prostate specific genes and also molecular targets for immunotherapy. It is expressed in the prostate, ovary, testis, and placenta. According to immunohistochemistry stain done previously in Dr. Zhou's lab an antibody against the POTE gene for the C-terminal common to group three POTES (CtG3P) stained the nucleoli, without staining the cytoplasm, as prostate cancer progressed. We also see that the full length POTE is stained by the antibody against the N-terminal which is observed as the diffusion of the stain increases in the cytoplasm. Based on our discovery that C-terminal common to group three POTEs (CtG3P) is localized in the nucleoli of malignant cells, we hypothesize that the full length of the POTE protein should be expressed in the cytoplasm and that the group three POTEs correlate with the progression of prostate cancer through nuclear translocation of the CtG3P into the nucleoli. PC3 prostate cancer cell line were used and cultured them in the incubator at 37ºC with 5% CO_2. We then used a transfectant to allow siRNA into the cells. The siRNA is meant to knockdown the mRNA for POTE protein. We had a control with no siRNA, scrambled negative with siRNA nonspecific to the POTE gene, siRNA specific to the C-terminal, and siRNA specific to the N-terminal, ankyrin repeat motifs, and the C-terminal. After this we extracted protein from the nuclear and cytoplasmic portion of the cells and performed Western Blot. The results show that the N-terminal (Ab79) only was expressed in the cytoplasmic proteins. Specific bands for the C-terminal were only expressed in the nuclear region when using antibody against the C-terminal (Ab76). We also see that when we combine the siRNA for the N-terminal, ankyrin repeat motifs, and C-terminal the POTE gene is knocked down. A truncated protein found around 20 kda was observed only in the control PC3 cells. This could be because the concentrations of the cells from the experiment was low. This also explains why the actin bands aren't consistent throughout as compared to the housekeeping beta actin protein. We found out a higher protein band between 100-150 kda. These results are only preliminary and we will continue and run more experiments to get them more accurate. Single siRNA doesn't seem to knock down the protein, but all three parts does. The antibody against the N-terminal showed full length protein only expressed in the cytoplasm. Antibody against the C-terminal showed truncated portion and full length large proteins present in the nucleus. Our data indicate that C-terminal of group 3 POTES correlates with the progression of prostate cancer.

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Molecular Analysis of miRNA and mRNA Signatures in Prostate Cancer in African American and Caucasian Men

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African American (AA) men have significantly higher age adjusted incidence and mortality rates compared to men of European ancestry (EA). Gene expression profiles of Prostate tumors (PCa) from AA and EA men may affirm the biological differences between the two ethnic populations. Recently, MicroRNAs (miRNA), the small noncoding RNAs that regulate gene expression have gained prominence as potential clinically actionable biomarkers. Thus far the role of miRNAs in health disparities is unclear because information is lacking about the association of miRNA and their mRNA targets in AA and EA men with and without PCa. This exploratory study was conducted to identify and functionally characterize miRNA and mRNA signatures in PCa.

We used publicly available miRNA expression data on AA and EA men with PCa and control samples (GSE8126 and GSE6956). miRNA expression data was analyzed to identify the miRNA associated with prostate cancer in AA and EA men, and to identify significantly differentially expressed miRNAs that distinguish the two ethnic populations. Supervised analysis allowed comparison of miRNA expression levels using t-test to identify significantly ($P<0.05$) differentially expressed miRNAs for each the data sets. Differentially expressed miRNAs were examined to identify their mRNA targets using the IPA MiRNA Target Filter tool.

We identified 654 target genes for the AA data, of which, 456 were present in the expression data. For the EA we identified 546 target genes, of which, 409 were present in the expression data. For PCa, we identified 341 target genes, of which 245 were present in expression data. A signature of 92 significantly ($P<0.05$) differentially expressed miRNA between cases and controls in AA men was identified. Comparison between cases and controls in EA men revealed a signature of 85 significantly ($P<0.05$) differentially expressed miRNAs. Comparison of miRNA expression levels between AA and EA men with PCa revealed a signature of 34 significantly ($P<0.05$) differentially expressed miRNAs from a total of 627 miRNAs evaluated. Unsupervised analysis using hierarchical clustering revealed functional relationships and similarities in patterns of expression profiles among the miRNAs examined. Supervised analysis revealed significant differences in mRNA/gene expression levels between cases and controls in both populations. We identified significantly differentially expressed genes distinguishing cases from controls. The analysis also revealed significant differences in mRNA expression levels between AA and EA men. Unsupervised analysis on the sets of significantly differentially genes revealed functional relationships and similarities in patterns of gene expression profiles.

We have shown that miRNAs are differentially expressed between cases and controls in either population. Our analysis also revealed that miRNAs are significantly differentially expressed between AA and EA men, suggesting that miRNAs may play a role in health disparities. miRNAs and their mRNA targets could function as potential biomarkers and targets for the development of new therapeutics and early intervention strategies to eliminate health disparities in PCa between AA and EA men. More studies are needed to validate these findings in AA and EA men with PCa.

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Prostate-Specific MTA1 Transgenic Mice Model

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Abstract:

In the United States, prostate cancer is a major health problem. It is the second leading cause of cancer death in American men. About 1 in every 7 men will be diagnosed with prostate cancer in their lifetime. Efforts have been made to improve the management and treatment of prostate cancer, but the concern of overtreatment and under treatment still remains. Better understanding of molecular mechanisms that play role in development and progression of prostate cancer is needed. We have previously shown that the high levels of metastasis-associated protein 1 (MTA1) are correlated with higher-grade tumor recurrence, metastasis, and poor prognosis and may serve as a potential prognostic biomarker for aggressive PCa in African American men. While the role of MTA1 in advanced PCa is well established, the causative role of MTA1 in PCa tumorigenesis remains unknown. To assess the role of MTA1 in the initiation and development of prostate cancer, we generated a prostate-specific MTA1 overexpression in transgenic mice model. Transgenic mice allow for the manipulation of genes within the body system. We expressed MTA1 and luciferase under the control of Probasin-Cre4. MTA1 genes regulate tumor growth and development. Pb-Cre4 secures expression of MTA1 specifically in the prostate. Luciferase expression by prostate epithelial cells allows monitoring the changes in the prostate and tumor growth in live animals without sacrificing. After series of carefully designed breeding strategies and genotyping, we collected MTA1 transgenic male mice for our experiments. Bioluminescent imaging of prostate specific MTA1 transgenic mice showed increased luciferase signal at 13 weeks of age versus normal prostate controls. *Ex vivo* images of urogenital system from MTA1 transgenic mouse showed GFP expression compared to control normal prostate. Next, we confirmed prostate specific expression of the MTA1 transgene. For this, we isolated protein from the homogenized prostate and performed western blot analysis using MTA1 and GFP antibodies. We demonstrated specific overexpression of ectopic MTA1 in the prostate of MTA1 transgenic mouse compared to its littermate control normal prostate (Pb-Cre4-). Further histological evaluation of the prostate tissue of the MTA1 transgenic mouse demonstrated the link between the expression of MTA1 and development of atypical proliferating lesions. Indeed, MTA1 overexpressing prostate showed signs of precancerous, high-grade prostatic intraepithelial neoplasia (PIN). We also detected differences in cell proliferation determined by Ki67 immunofluorescent staining. Taken together, our data demonstrate that prostate specific overexpression of MTA1 results in the development of PIN at 13 weeks of age. While this work is in progress, we expect to obtain information on the biological relevance of MTA1 as possible driver of prostate cancer tumorigenisis.

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MICA (MHC class I polypeptide-related sequence A) as a Factor of Immunoevasion in Prostate Cancer

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Background Prostate cancer (PCa) remains the most common cancer in men in the U.S. High levels of soluble MHC class I polypeptide-related sequence A (sMICA), which is cleaved from the membrane of the cells, have been found in several types of cancer, such as lung, gastrointestinal, gynecologic, breast, and renal. Expression of sMICA was also detected in human PCa cell lines PC-3 and DU145. Recent research shows that sMICA plays an important role in the mechanism of immunoevasion by downregulating the receptors of NK cells and subpopulations of T cells. Through previous research, HURP (Hepatoma up-regulated protein) has been found in large numbers in PCa samples. It has been confirmed that PCa cells with high levels of HURP treated with radiation or chemotherapy are more likely to survive than cells with lower levels of HURP. In the ten weeks of my program, I tested the levels of sMICA, which are released in the medium where PCa cells were cultured. This would open up possible experiments for further understanding of its association in the context of immunoevasion and resistance to therapy.

Methods LNCaP cells were cultured under different oxygen levels. 2x105 cells were plated in T25 flasks. Some cells were cultured at 20% O2 (normoxia), while others were cultured at 2% O2 (hypoxia). After 24 hours of plating, the cells were trypsinized and counted using a NeuBauer chamber and the media were removed and stored at 0 hours, 24 hours, and 48 hours. The presence of sMICA in culture supernatants were detected by DuoSet ELISA (enzyme-linked immunoSorbant Assay) Development System by R&D Systems. 1.2x106 cells were grown in 10cm dishes under hypoxia and normoxia conditions. After 24 hours, the cells were lysated starting from 0 hours, 24 hours, and 48 hours. The lysates were used in western blot analysis to detect the cytoplasmic MICA.

Results

sMICA was detected by DuoSet ELISA. We found that after forty eight hours, the cells grown in hypoxia expressed about five times more sMICA than cells grown in normoxia. When analyzed by Western blot, normal oxygen levels (20% O2) increased MICA by 3.5-fold. Hypoxia reduced MICA expression by 11%.

Conclusion & Discussion From the results, we suggest that different oxygen levels have an effect in the expression of sMICA. Although our initial experiments with MICA suggest that lower oxygen levels affect MICA expression in LNCaP cells, further experiments are required to validate this conclusion. If we can validate the results shown in published literature, then we may be able to find a relationship between MICA and HURP.

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Long non-coding RNAs as potential diagnostic/prognostic markers in prostate cancers

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[1]Biology Department, Tougaloo College, Tougaloo, MS [2]Cancer Institute, University of Mississippi Medical Center, Jackson, MS Introduction

Abstract:

Currently, most prostate cancers are found during screening by usage of a prostate-specific antigen (PSA) blood test and/or a digital rectal exam (DRE). In the event that cancer is suspected, the actual diagnosis will be made via a prostate biopsy. Recently, gene alterations have come into investigation for the diagnosis of prostate cancer. Diagnostic markers are biological parameters that aid in the diagnosis of disease. The investigation of alterations in genes could encourage the efficacy of using the presence of gene alterations as a diagnostic marker for prostate cancer. The chief objective of this preliminary investigation was to determine if expression of long non-coding RNAs are altered in individuals diagnosed with prostate cancer. Genes were grouped based on the differences between the altered and unaltered states as well as the number of times these alterations occurred. TCGA (the Cancer Genome Atlas) prostate cancer dataset at cBioPortal was used as a source for 191 listed genes, and those with alterations were recorded and all other genes were excluded. For genes showing alterations, overall survivability and disease free survivability data were taken and genes that did not show a significant difference in survivability were excluded. Following the exclusion of non-significant genes, there were 20 altered genes that were found to have a significant effect on the survivability in prostate cancer incidences. Of these genes, only 5 (DLEU2, SNHG6, PVT1, CASC8, FENDRR) were found to be altered in greater than or equal to 10% of the cases observed. Our study suggests that TCGA prostate cancer dataset is a valuable source for identification of long non-coding RNAs associated with prostate cancer.

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Effects of NOTCH3 in Aggressiveness of Prostate Cancer

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In Dr. Xu's lab previously, data was obtained that ascertained the Lunatic Fringe (*Lfng*) has a tumor suppressive role in the prostate. Presence of *Lfng* in a healthy prostate enhanced Notch3 activation. The increase was accompanied by an increase in the expression of Nkx3.1 tumor suppression gene and the prevention of Prostatic Intraepithelial Neoplasia (PIN). Deletion of *Lfng* in healthy prostate showed increased rates of PIN and a down regulation of Notch3. Deletion of *Lfng* also caused sarcomatoid carcinoma of the prostate, a very aggressive form of disease, in a very small percentage of mice. Knockdown of *LFNG* in DU-145, a human prostate cancer cell line, showed increased expression of Notch3. The purpose of the experiment performed and described in this report is to see if overexpression of Notch3 in DU-145 increased the aggressiveness of the cells. Two methods were used to test. First the cells were grown to confluence and then transfected with Notch3, and a control group of cells not transfected was used for comparison. After successful culture the first method performed was a "wound-healing assay" to measure cell migration. The second method was Western Blot analysis to test for signs of Epithelial-Mesenchymal Transition (EMT). EMT is a process by which epithelial cells, which most prostate cancers are found in, lose their polarity and adhesion properties and become more migratory mesenchyme cells. EMT is linked to metastasis of cancer, because it allows cells to travel to other parts of the body via lymph or blood. EMT has also been linked to the presence of tumor initiating cells. After cell lysates were obtained after transfection, Western Blot analysis was performed to test the levels of vimentin (expressed highly in mesenchymal cells, and E-cadherin (expressed highly in epithelial cells). Control cells were also tested for comparison. Results showed no change in E-cadherin or Vimentin levels. However there was down regulation of β-actin control inNotch3 transfected samples. Another control GAPDH was used to confirm these results. In published literature there has been linkage to increased levels of β-actin observed in highly invasive variants of several different tumor cell lines. This could be the basis of future studies regarding Notch3 and a tumor suppressive role. These experiments were done *in vitro* where cells react differently than they do in vivo when they can react with surrounding cells and environment. The importance of using animal models to study cancer is beneficial because of this interaction of cells in the body. Currently in the lab we are in the process of generating mice with deletion of *Lfng* as well as *p53*. *p53* is a tumor suppressor gene that is often mutated in cancer. The goal of this double deletion is to establish a model of aggressive prostate cancer that displays sarcomatoid features. This model could be used for treatment studies as well as monitoring the progression from indolent to aggressive disease.

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Testing the Anti-Proliferative Effects of Thermally Responsive Elastin-like Polypeptides on PC-3 mm and DU-145 Prostate Cancer Cell Lines

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Elastin-like polypeptides (ELPs) have been employed in a wide variety of cancer models as a vehicle for drug delivery due to its high pharmacokinetic properties and its ability to make anti-cancer drugs essentially specific. TPs that are known to cause cell cycle deregulation have been conjugated with ELP in order to increase cellular uptake and decrease drug dispersal throughout healthy tissues in the body. ELPs conjugated with cell cycle-inhibiting **therapeutic peptides (TPs)** and **cell-penetrating peptides (CPPs)** are being used to treat tumorous sites by increasing the retention effect of therapeutic drugs through external thermal applications. By prolonging the retention effect of anti-cancer drugs at tumor sites, drug concentration throughout the rest of a patient's body will decrease, reducing the side effects of non-specific anti-cancer drugs. Increased retention time along with increased cellular drug uptake due to CPPs allow for a more effective treatment whilst mitigating the negative side effects of anti-cancer drugs. ELP, a derivative of tropoelastin, is widely familiar due to its thermal responsiveness. As a solution containing ELP approaches its **transition temperature (Tt),** it will begin to precipitate and form an aggregate with other ELPs. After this transition occurs, CPPs facilitate entry into the cell where TPs then locate targets of interest for treatment. These classes of drugs have achieved multiple successes in both in vitro and in vivo models. During my 12 week internship, the anti-proliferative effects that **p21-ELP-Bac** would have on **DU-145** and **PC-3 mm** prostate cancer cell lines were closely studied. Aside from cell study, a large portion of my time was focused on protein synthesis and purification followed by characterization by means of Western blot and Tt determination. Because p21-ELP-Bac contains a cell cycle inhibitor, p21, it is believed that by utilizing thermally responsive ELP conjugated with a TP and CPP, one could attain an even higher cell death count as opposed to treating without a thermal responsiveness because of increased retention time, and therefore intracellular drug uptake. To state my hypothesis, if we utilize ELP conjugated with p21 (an anti-cancer peptide) and Bac (a cell-penetrating peptide), then we will be able to increase intracellular drug uptake, resulting in an increased cytotoxicity and therefore cell death because of ELPs' ability to cause an increased localization of TPs and CPPs.At the conclusion of my research, it was found that the thermally responsive properties of ELPs do in fact have the largest effect on cell proliferation when compared to the treatment groups at normal incubation temperatures. From our data, we can clearly see that cells treated with p21-ELP-Bac at 42°C have a high death rate compared to the cells treated in the 37°C incubator. We also see an increased cytotoxicity with increasing drug concentrations in both temperatures. This is important because seeing a correlation between cellular death and drug concentration removes the possibility of an increase in temperature being the key contributor to cellular death. In regards to future studies, I will need to run more experiments to confirm my finding and ensure that my results are repeatable. After this, I would like to move on to animal studies to see if our model mirrors the data we received in our *in vitro* studies.

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Accumulation of Cholesteryl Esters is associated with the Progression of Prostate Cancer

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Background: Prostate cancer is the most diagnosed cancer, and the second leading cause of cancer death in men. When treating patients with prostate cancer, no ideal biomarkers for the differentiation of indolent and malignant cases at time of diagnosis, and no effective therapy for castration resistant prostate cancer are two most prominent challenges among others. Thus, discovering specific predictive biomarkers and new therapeutic interventions for prostate cancer will be of great significance. Cholesteryl esters are mainly considered as a storage form of energy. However, recently, cholesteryl esters have been recognized to be associated with many pathological changes, such as atherosclerosis, Wolman Disease, and cancers. This study is aimed to explore the association of cholesteryl esters with prostate cancer.
Methods: Three methods will be employed in this study: 1) ESI/MS-MS on 47 fresh-frozen prostatic tissues for global lipid profiling; 2) Real-time PCR on 16 fresh-frozen prostatic tissues for the expression level of genes related to the pathogenesis of prostate cancer and metabolism of cholesteryl esters; and 3) immunohistochemistry on 165 formalin-fixed and paraffin embedded prostatic tissues for the expression level of ACAT1 and LAL.
Results: We found the lipids in category of total lipids, total neutral lipids, cholesteryl esters and free fatty acids are higher in prostatic tissues than in benign prostatic tissues. Among them, cholesteryl esters increased most (5.8-fold) in prostate cancer. The real-time PCR results indicated that the expression level of genes Pten, LIPA and ABCA1 (but not ACAT1) are obviously lower in high grade than in low grade prostate cancer. It is interesting that the proteins ACAT1 and LAL are reversely expressed: In prostate cancer, ACAT1 is highly expressed, but LAL is not expressed. In contrary, in benign ACAT1 is not expressed, but LAL is highly expressed.
Conclusion and Significance: Accumulation of cholesterol esters in prostate cancer cells correlate with the progression of prostate cancer. The mechanism of accumulation of cholesteryl esters in prostate cancer cells could be a result of mixed effect of anabolism and catabolism for cholesteryl esters. These results suggest that cholesteryl esters could be potential prognostic biomarkers in differentiating indolent from aggressive cases of prostate cancer, and therapeutic targets for treatment of advanced prostate cancer, including castration resistant prostate cancer.

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Identifying Progression of Aggressive Prostate Cancer Originating from Lunatic Fringe/Notch-Regulated Mice Models

Courtney Mangum[1], Wen-Cheng Chung[2], Keli Xu[2, 3]

[1]Biology Department, Tougaloo College, Tougaloo, MS; [2]Cancer Institute, University of Mississippi Medical Center, Jackson, MS; [3]Department of Neurobiology and Anatomical Sciences, University of Mississippi Medical Center, Jackson, MS

Lunatic Fringe (Lfng), a Notch modulator, plays a tumor-suppressive role in the prostate. Loss of Lfng causes expansion of stem-like cells in the prostate basal epithelium and increased cell proliferation, which in turn results in prostatic intraepithelial neoplasia (PIN), abnormal morphological structures of epithelial cells. PIN may turn into an aggressive form of prostate cancer (PCa) via epithelial-mesenchymal transition (EMT). EMT is characterized by an up-regulation of mesenchymal marker, Vimentin and down-regulation of epithelial marker, E-Cadherin. Using Probasin-Cre4, we have genetically engineered mice models (GEMMs) with Lfng deletion in combination with the deletion of tumor suppressive p53 or activation of oncogenic Kras. Prior experiments have shown accelerated PIN development in these models; therefore, we hypothesize that Lfng deletion in combination with p53 deletion or Kras activation will accelerate EMT development in GEMMs. After breeding and genotyping, we isolated and dissected prostate tissue from mice with experimental genotypes Pb-Cre4/Lfng/Kras and Pb-Cre4/Lfng/p53, and control genotypes Pb-Cre4/Lfng and Lfng/p53. The Western blot results showed an intense up-regulation of Vimentin and a modest up-regulation in the E-Cadherin expression in the Pb-Cre4/Lfng/p53 mice model, which may suggest EMT in addition to increased epithelial proliferation. However in opposition to our hypothesis, the Pb-Cre4/Lfng/Kras mice model resulted in up-regulated E-cadherin and down-regulated Vimentin expressions. This does not suggest EMT in this model. Due to the timeliness of mice breeding and prostate cancer progression, more studies will be needed to test for the mechanisms underlying PCa progression in the Lfng/Notch-regulated GEMMs. These preliminary results may show that different pathways are used during pathogenesis of aggressive forms of PCa.

Financial Support: Start-up funds from the UMMC Cancer Institute, The University of Mississippi Medical Center, HBCU Summer Research Training Program and the Gomez lab. Financial Support: PC131783 (HBCU-UMMC PCRP).

Effects of Hypoxia on the Aggressiveness of PCa

Ornella Amoah[1], Ingrid Espinoza[2,3], Hamza Patel[4], Christian Gomez[2,3,5]

[1]Department of Chemistry, Jackson State University, Jackson, MS, [2]Cancer Institute, University of Mississippi Medical Center, Jackson, MS, [3]Department of Biochemistry, Mississippi Medical Center, Jackson, MS,[4]Vanderbilt University, Nashville, TN, [5]Department of Pathology and Radiation Oncology, Mississippi Medical Center, Jackson, MS

Tumor hypoxia results from insufficient supply of oxygen to certain areas of the tissue and has been linked to malignant progression, metastasis, resistance to therapy, and poor clinical outcome of cancers in recent publications. In prostate tumor cells, evidence has been shown that the tissue cells thrive in moderately hypoxic conditions. Hypoxia may very well exist in both benign and malignant prostate cells.

The expression of hypoxia-controlled proteins is associated with aggressiveness of prostate cancer. LNCaP cells overexpressed with HURP and their derived cell lines C4-2B, a more progressed form of PCa, were utilized in our experiments. Our objective is to establish a correlation between tumor hypoxia and aggressiveness of prostate cancer through the observation of intensity of hypoxia-associated molecules (HURP and HIF-1α) in prostate tumors and cancer cell lines. To test our hypothesis we used in-vitro cell lines and patient derived immunostaining.

Two forms of hypoxia treatment were used during the course of this experiment, incubation at 37ºC in humidified air enriched 5% CO_2 with 2% O_2 content and cell exposure to Cobalt (II) Chloride. We used 8%-12% SDS-PAGE gels and Western blot analysis to detect the expression our proteins: hypoxia- inducible factor-1 (HIF-1α), to show the up-regulation of hypoxia in the tumor, hepatoma upregulated protein (HURP) as a predictive marker for aggressive PCa, Beta-actin and GAPDH as loading internal controls. We utilized LNCaP cells overexpressed with HURP and their derived cell lines C4-2B, more progressed forms of PCa. The Gomez lab has published evidence demonstration HURP as an independent biomarker for aggressive PCa, these findings allowed us to use HURP as a marker. The PCa patient tissue immunostaining was done in the lab and scored by a pathologist. 0 being low grade and 3 being high grade cancer.

Thirty-four PCa patient malignant tumors were analyzed after immunostaining for HIF-1α and Gleason scores were obtained. We found a trend in our analysis which showed an increased HIF-1α staining, in many cases, had an increase in Gleason score as well. More patient data should be collected to illustration these results at higher values. The LNCaP and C4-2B treated with $CoCl_2$ clearly showed a consistent up-regulation of HIF-1α, however we were not able to analysis for HURP in these lines. HURP and HIF-1α expression is up- regulated under hypoxia incubation as well.

Financial Support: PC131783 (HBCU-UMMC PCRP)

Appendix #12: Tougaloo College Research Day Featuring our Trainees

2014

TOUGALOO COLLEGE
13th Research Symposium on Students' Summer Research Series





2014 Abstracts

Natural Science Division
Tougaloo College







Tougaloo MS 39174
October 17-18, 2014

Sponsored by: HHMI/Kincheloe Society

Poster Demonstrations

Kincheloe Hall

October 17th 2014

10:00-11:00 AM; 12:00-1:00 PM

Page	Name	Major	Research Institution
1	Irene Arguello	Biology	Tougaloo College and University of Mississippi Medical Center
2	Waynesha E. Blaylock	Biology	University of Texas Southwestern Medical Center
3	Elrica Brown	Biology	Tougaloo College
4	Marcus Brumfield	Math and Computer Science	University of Mississippi
5	Ineshia Coleman	Biology	Brown University
6	Acacia Cooper	Biology	Purdue University
7	Rochelle Corbitt	Biology	University of Mississippi Medical Center
8	Donald Davis	Chemistry	Brown University, Tougaloo College
9	Dominique Foster	Biology	Tougaloo College
10	Johnathan Grayson	Biology	Tougaloo College
11	Brandon Hackett	Biology	Tougaloo College
12	Kisa Harris	Chemistry	University at Buffalo
13	Jasmine Jennings	Biology	University of Mississippi Medical Center
14	Ashley King	Biology	University of Mississippi
15	Eybriunna Lewis	Chemistry	Jackson State University
16	Jessica McKenzie	Biology	University of Mississippi Medical Center
17	Dyffreyon McGowan	Biology	Tougaloo College
18	Le Andrea Mitchell	Biology	University of Mississippi Medical Center
19	DaChiron Robinson	Biology	Tougaloo College and University of Mississippi Medical Center
20	Courtney Sims	Chemistry	University of Mississippi Medical Center
21	Jonathan Taylor	Math and Computer Science	Texas State University
22	Denise Ward	Biology	Purdue University
23	Aurora Washington	Biology	Brown University
24	Claresa Youngblood	Biology	University of Mississippi

2014 13th TC Research Day Program ctd.

Oral Presentations

Kincheloe 106 Lecture Room

October 18th 2014

8:30-11:30 AM

Page	Name	Major	Research Institutions
25	Joshua Agee	Biology	Tougaloo College, NASA
26	Trianna Humphrey	Biology	University of Georgia
27	Jonathan Moore	Biology	Brown University
28	Charles Phillips	Biology	Tougaloo College
29	Margie Rayford	Chemistry	Harvard Medical School
30	Denisha Spires	Biology	University of Mississippi Medical Center
31	Alexandria Thompson	Biology	Tougaloo College, NASA
32	Terika Tillman	Chemistry	University of Mississippi
33	Diva Whalen	Biology	University of Mississippi Medical Center

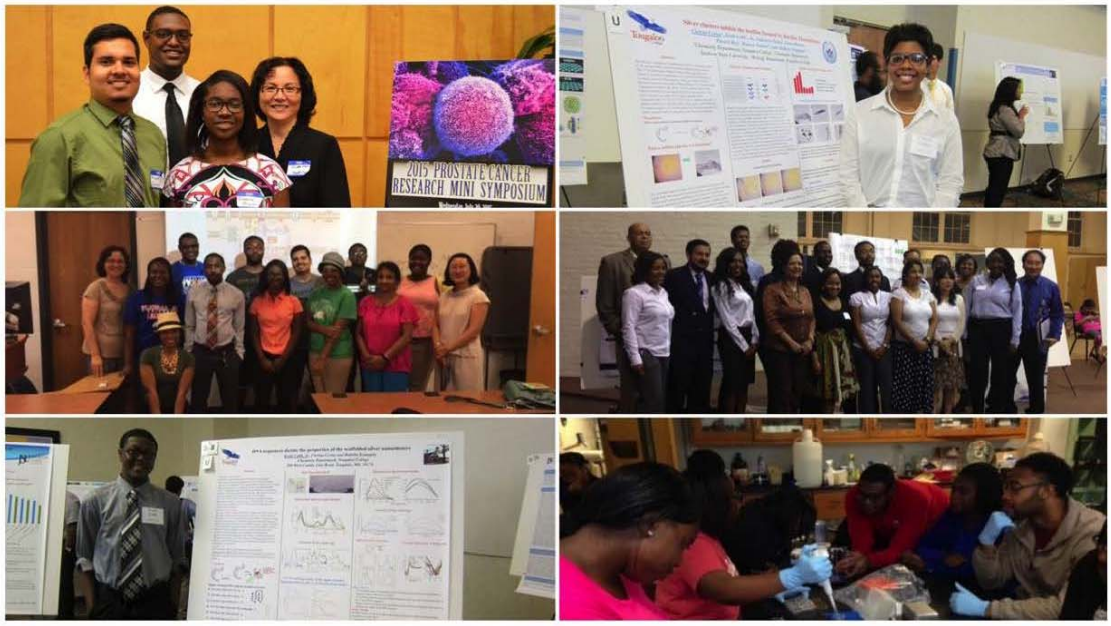
2015

14th Research Symposium on Students' Summer Research Series

Natural Science Division
Tougaloo College

Tougaloo, MS 39174
October 16 – 17, 2015

2015 Abstracts



TOUGALOO COLLEGE 1869

Sponsored by: HHMI/Kincheloe Society

Poster Demonstrations
Kincheloe Hall
October 16th 2015
10:00-11:00 AM; 12:00-1:00 PM

Page	Name	Major	Research Institution
1	Waynesha E. Blaylock	Biology	U.T. MD Anderson Cancer Center, Houston, Texas
2	Nateasha Carter	Biology	University of Texas Southwestern Medical Center
3	Dominique Clark	Biology	Mississippi State University,
4	Keith Cobb	Biology	Tougaloo College
5	Acacia Cooper	Biology	Virginia Tech
6	Christa Corley	Biology	Tougaloo College
7	Karien Dixon	Chemistry	St. Jude Children's Research Hospital, Memphis
8	Dominique Foster	Biology	Tougaloo College
9	Angel Garcia	Biology	University of Mississippi Medical Center
10	Kelli Gutter	Biology	University of Mississippi Medical Center
11	Brandon Hackett	Biology	Tougaloo College
12	Trianna Humphrey	Biology	University of Mississippi Medical Center
13	Aswad Jackson	Biology	University at Buffalo
14	Sharrall Jenkins	Biology	Brown University
15	Tembra Jones	Biology	Base pair Program, University of Mississippi Medical Center
16	Jessica McKenzie	Biology	University of Mississippi Medical Center
17	Le'Andrea Mitchell	Biology	MS State Dept. of Health
18	Josiah Moore	Chemistry	University of Alabama, Tuscaloosa
19	Kendrique Morgan	Biology	University at Buffalo
20	Maria Muhammad	Chemistry	University of Mississippi Medical Center
21	Charles Phillips	Biology	University of Mississippi Medical Center
22	Courtney Sims	Chemistry	University of Mississippi Medical Center
23	Shantasia Thomas	Biology	Case Western Reserve

			University
24	Alexandria Thompson	Biology	Tougaloo College
25	Corey Walters	Chemistry	University of Mississippi
26	Aurora Washington	Biology	Brown University
27	Maurice Whalen	Biology	Brown University
28	Shenequa Wilson	Biology	University of Mississippi
37	Raquema Williams	Biology	Tougaloo College

Oral Presentations
Kincheloe 106 Lecture Room
October 17th 2015
8:30-11:30 AM

Page	Name	Major	Research Institutions
29	Timera Brown	Biology	University of Mississippi Medical Center
30	Michael Cleveland	Biology	Community Liaison DeKalb County Board of Health
31	Breland Crudup	Biology	Brigham and Women's Hospital
32	Kembe Keys	Chemistry	SMDEP, Ohio
33	Courtney Mangum	Biology	State University of NY, Buffalo
34	Angelyn Martin	Biology	Mississippi State University
35	Jonathan Moore	Biology	Brown University
36	Jonathan Taylor	Math and Computer Science	Engineer Research and Development Center-Information Technology Lab

2016

Poster Demonstrations

Kincheloe Hall

October 14th, 2016

10:11 AM; 12-1 PM

Page Number	Name	Type	Major	Research Institution
3	Lauryn Ashford	Poster	Biology	Brigham and Women's Hospital
4	Kristy Banyard	Poster	Chemistry	Tougaloo College
5	Allison Barnes	Poster	Biology	University of MS Medical Center
6	Timera Brown	Poster	Biology	Vanderbilt University
7	Shaikara Bryant	Poster	Biology	Tougaloo College
8	Michael J. Cleveland	Poster	Biology	Howard University
10	Joshua Cotton	Poster	Biology	University of MS Medical Center
14	Jerrica Gibson	Poster	Biology	University of Illinois Animal Science Department
15	William Gladney	Poster	Chemistry	Tougaloo College
17	Billy Hall	Poster	Computer Science	Tougaloo College
19	Jabari Jackson	Poster	Chemistry	Boston University Medical Center
20	Kierra Jones	Poster	Biology	Brown University
21	Tembra Jones	Poster	Biology	University of MS Medical Center
22	Kembe Keys	Poster	Chemistry	Wuhan University
23	Danielle Magee	Poster	Biology	University of Missouri-Columbia
24	Courtney Mangum	Poster	Biology	University of MS Medical Center
26	Josiah Moore	Poster	Chemistry	Brown University
27	Maria Muhammad	Poster	Chemistry	University of MS

29	Shanta Sykes	Poster	Biology	Brown University
30	Ashley Taylor	Poster	Biology	Tougaloo College
31	Victoria Taylor	Poster	Biology	Tougaloo College
32	Shantasia Thomas	Oral	Biology	University of Alabama at Birmingham
7	Melissa Toliver	Poster	Biology	Tougaloo College
33	Corey Walters	Poster	Chemistry	University of Mississippi
34	Maurice Whalen	Poster	Biology	Brown University
35	Faren White	Poster	Chemistry	University of MS Medical Center

Oral Demonstrations

Kincheloe 106 Lecture Room

October 15th, 2016 8:30-11:30 AM

Page Number	Name	Type	Major	Research Institution
9	Abednego Nii Adom Commey	Oral	Biology	Tougaloo College
11	Breland Crudup	Oral	Biology	Harvard Medical School
12	Karien Dixon	Oral	Chemistry	Washington University in Saint Louis
13	Angel Garcia	Oral	Biology	State University of New York at Buffalo
16	Jessica Gutierrez	Oral	Computer Science	Albert Einstein School of Medicine
18	Aswad Jackson	Oral	Biology	Johns Hopkins University School of Medicine and Johns Hopkins School of Public Health
25	Antwan Matthews	Oral	Biology	Brown University Alpert Medical School
28	Shanterell Redd	Oral	Biology	Argonne National Laboratory
36	Jonathan Zuniga	Oral	Computer Science	HCHS/SOL Bronx Field Center, NY

Appendix #13: Trainees Awards

Ansley Scott: UAMS internship

From: Ansley Scott [mailto:ansleyscott@yahoo.com]
Sent: Tuesday, March 03, 2015 2:36 PM
To: Hudson, Brittany
Subject: Re: SURP acceptance

Good afternoon,

I am replying to confirm my intent to participate as a SURP fellow. Thank you for the opportunity to participate in the program and I am looking forward to it!

Best,

Ansley E. Scott
LSMAMP Bridge to Doctorate Scholar
M.S. in Biology Student
Jackson State University

On Tuesday, March 3, 2015 1:37 PM, "Hudson, Brittany" <BHudson@uams.edu> wrote:
Dear Ansley,

Congratulations! We are very pleased to inform you that you have been selected to participate in our NIH-NHLBI sponsored**UAMS Summer Undergraduate Research Program (SURP) to Increase Diversity in Research**. The selection committee was most impressed with your application. The program dates will be June 1-July 31, 2015, inclusive, and you need to be able to attend the entire period. All participants will receive a salary of $3600 for the nine week period (equivalent to $10/hr for 9, 40 hr weeks). An additional $2400 is available on an as needed basis only. If you do not live in the greater Little Rock metropolitan area, these funds will be used for housing which we will locate for you. In addition, if you do not live in the greater Little Rock metropolitan area and will be travelling here to participate in the program, we will reimburse you for your travel expenses to our campus and when you leave at the end of the summer. Funds may also be allocated to the research laboratory you work in and for travel to a scientific meeting. Meals for the summer are not included in the $2400.

You were selected from a very large number of very competitive applications. Therefore, it is important for you to confirm your intent to participate as a SURP Fellow by **4:30 PM (Central Standard Time) on Tuesday, March 17**. Please make note that if we do not hear from you by March 17 your position will offered to another applicant. If you already know you will not be participating, please respond immediately so we may offer your slot to another participant.

If you have any questions regarding the program or need assistance in making a decision, please contact me.

Thank you and once again congratulations!

Brittany Hudson
Program Coordinator
UAMS Graduate School
501-686-5906

Ansley Scott: Poster award

JACKSON STATE UNIVERSITY
1877
P. O. Box 18750
JACKSON, MISSISSIPPI 39217-1050

OFFICE OF THE DEAN
COLLEGE OF SCIENCE, ENGINEERING & TECHNOLOGY

PHONE: (601)979-0777
FAX (601) 979-0570

September 20, 2014

Ansley E. Scott
4906 Hwy 61 S
Mound Bayou, MS 38762

Re: Student Poster Award Winner - Eleventh International Symposium on Recent Advances in Environmental Health Research and Thirteenth International Symposium on Metal Ions in Biology and Medicine

Dear Ansley Scott:

Congratulations! We are pleased to announce that you are the Second Place winner in the Masters division of the student poster competition held during the Eleventh International Symposium on Recent Advances in Environmental Health Research and Thirteenth International Symposium on Metal Ions in Biology and Medicine. Your poster presentation was excellent. The symposium planning committee commends you and your mentor for the hard work demonstrated through your scientific findings. The award amount for Second Place in the Masters division is $225. A check is being requested on your behalf.

If you have any questions concerning this award, please contact Inez K. Johnson via email at inez.k.johnson@jsums.edu or by phone (601)979-2095. I wish you the best in future scientific endeavors.

Sincerely,

Paul B. Tchounwou, Sc.D., F.A.B.I., I.O.M.
Symposium Chair
Associate Dean for Graduate & International Programs
College of Science, Engineering & Technology
Presidential Distinguished Professor
Director, NIH-RCMI Center for Environmental Health

Ansley Scott: LSMAMP Fellowship

June 25, 2014

Ms. Ansley Scott

Dear Ms. Scott:

Congratulations! I am pleased to inform you that you have been selected to receive a fellowship in the Louis Stokes Mississippi Alliance for Minority Participation (LSMAMP) Bridge to the Doctorate Program and join Cohort 11. This program is funded by the National Science Foundation (NSF.) Your program will begin in August, 2014. This program lasts for up to two years and, for at least 20 hours a week of lab work, provides payment of tuition and a monthly stipend.

This is a very rigorous program (please see the requirements listed on the next page,) which is geared to students who are preparing for studies at the doctoral level and the achievement of a PhD. Although the award will be for up to two years of support, it is expected that you will continue your studies through to the completion of your doctoral degree in your chosen STEM field. You are asked to sign a contract indicating your intention of pursuing the PhD.

An acceptance form and the contract are attached. Please sign them and return them to a LSMAMP staff member to indicate your acceptance of the fellowship. Again, we congratulate you on this significant achievement and look forward to having you join us at Jackson State University.

Sincerely,

Ashton Hamme II, Ph.D.
Professor of Chemistry
Program Director

Encl.

JSU
JACKSON STATE UNIVERSITY

LSMAMP Bridge to the Doctorate Program – P.O. Box 18119, Jackson, MS 39217 – 601-979-2024

Anthony Keyes: Poster presentation award at ABRCMS 2015



Anthony Keyes: Research Experience for Undergraduates Summer Program at University of Illinois at Urbana-Champaign

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Department of Chemistry

School of Chemical Sciences
463 Roger Adams Laboratory, Box 48, MC-712
600 South Mathews Avenue
Urbana, IL 61801

March 6, 2015

Anthony Keyes
1314 Diamond Rim Drive
Colorado Springs, CO 80921

Dear Mr. Keyes:

Congratulations on your selection to participate in the Illinois Research Experience for Undergraduates (REU) program, sponsored by the U.S. National Science Foundation and the 3M Foundation. If you accept, you will be doing research with Dr. Paul Hergenrother, hergenro@illinois.edu. You will also participate in a variety of educational and social activities with other REU attendees.

The REU program offers housing in Urbana, reimbursement of your travel expenses to Urbana (coach-class round trip or mileage if you drive), $800 for living expenses and a $5,000 stipend, the payment of which will be paid in 3 installments on or around 6/1, 7/1, 8/7. Taxes will not be withheld from this stipend and this income is reportable to taxing agencies. Housing will be at Europa House (http://www.europa-house.org/) a few blocks from Chemistry. Chemistry pays for this housing directly, so extraordinary circumstances are required to justify alternative housing arrangements.

If you accept our offer, we ask that you arrive in Urbana on Sunday, May 31, 2015, and start the program on Monday, June 1, 2015. The program concludes on Friday, August 7, 2015, with check-out on August 8, 2015. The program will last for a total of ten weeks. In order to facilitate the stipend arrangements, Staci Ryan (staciry@illinois.edu, 217-244-0565), will contact you regarding the process. Please also confirm your start date with her. We recognize that not all schools are done for the year in late May; while we cannot extend the completion of the program past August 7, we can be flexible on the start date.

Ms. Ryan will be contacting you again soon with more information on the program details, additional paperwork that will need to be completed for you to register for the course associated with this REU program (at no cost to you) and research project assignments. **Please let us know by Monday, March 9 if you accept this offer**. If you have already accepted another position for the summer, please let us know as soon as you can so that we may offer your spot to another applicant.

For your travel here and back, there is a simple and economical procedure. If you will be flying to Urbana-Champaign, we will issue the ticket for you with the help of our agents at Suzi Davis Travel. If you will be driving to Urbana-Champaign, please note the mileage for your trip here so we can process a reimbursement request for you upon your arrival.

Finally, because the REU funders maintain a keen interest in the summer scholars, I ask that you prepare a brief account (one to two pages in length) before your departure describing your personal and educational background, your interests and plans for the future and, in general terms, a brief report on the project you undertook over the summer. You will also present a poster on your research during the last week of the program, and a PDF of that poster should be turned in before you leave Urbana.

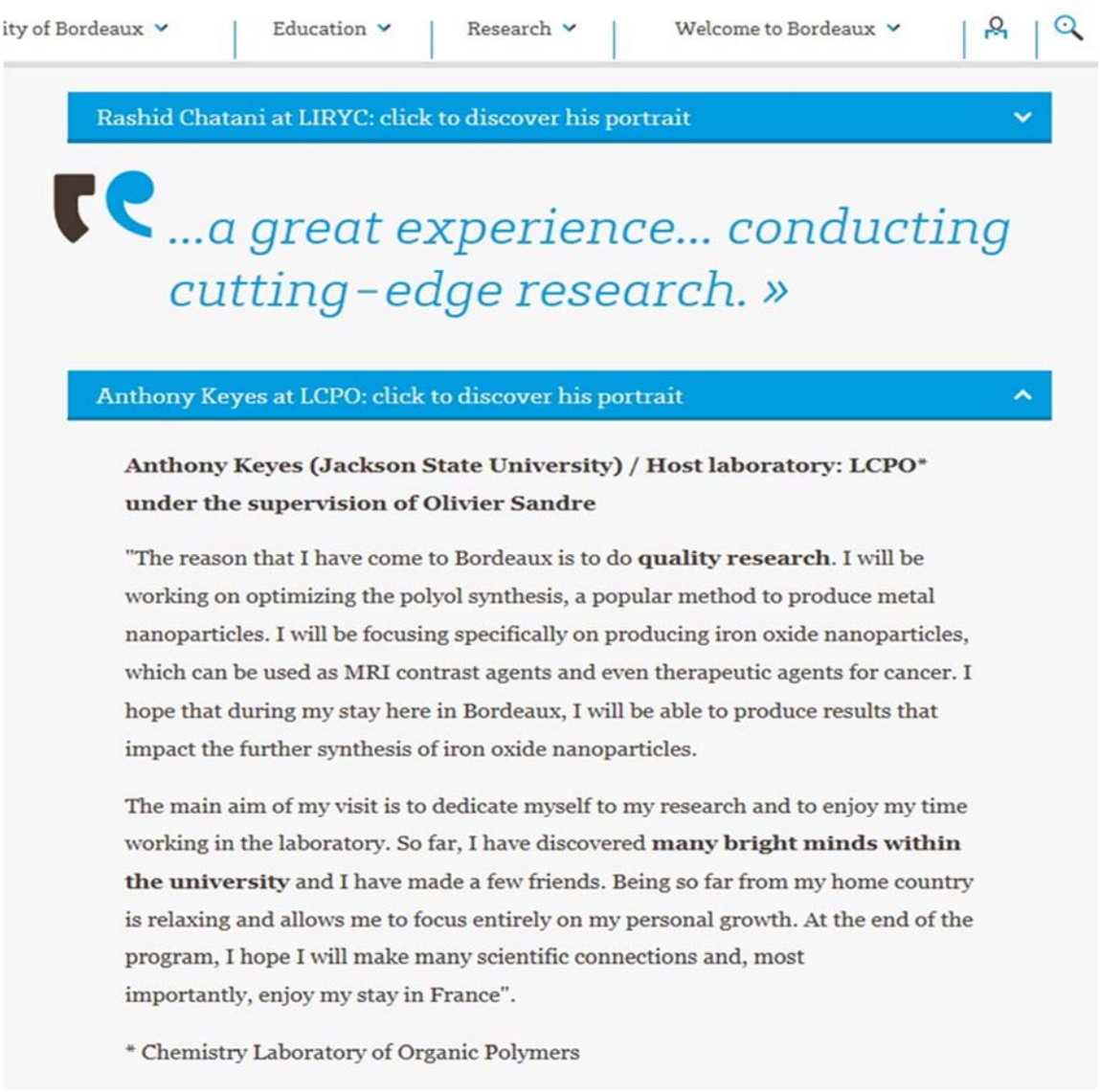
Once again, congratulations, and I look forward to hearing your decision about this offer by **Monday, March 9, 2015.**

Sincerely,

Alexander Scheeline
Professor of Chemistry Emeritus

telephone 217-333-2999 • *fax* 217-265-6290
email scheelin@scs.illinois.edu • *url* http://www.chemistry.illinois.edu/faculty/Alexander_Scheeline.html

Anthony Keyes: 2016 iREU at University of Bordeaux, France



Brittany Martin: Fellowship STaRS Summer Research Program

On Mar 4, 2015, at 12:07 PM, Wallace, Lynese N <lynesewa@bu.edu> wrote:

<image001.png>

STaRS Summer Research Program
Graduate Medical Sciences
Boston University School of Medicine

March 4, 2015

Dear Brittany:

Congratulations! We are pleased to offer you acceptance to the Division of Graduate Medical Sciences Summer Training as Research Scholars (STaRS) program located on Boston University's Medical Campus. The program dates are June 1, 2015 – August 7, 2015, with a move-in date set for Friday, May 30, 2015.

Your summer research internship includes two weeks of off-campus preparation plus ten weeks of on-campus daily research in a laboratory; mentorship by a GMS faculty mentor and designated members of the laboratory community; participation in our annual summer research symposium; weekly professional development seminars and enrichment activities in and around Boston, our college-oriented city.

As a research intern you will live in apartment-style housing (double occupancy) on Boston University's Charles River Campus, which is within walking distance of the Back Bay neighborhood. Additionally, you will receive a $4,800 stipend, housing, and travel to and from the city of Boston, as well as travel support to attend a national conference. (Please Note: We do not recommend that research interns bring a vehicle to Boston for the summer internship. Boston is a walkable, "bike-friendly" city with an excellent public transportation system.)

We hope that you will choose to join our cohort for your 2015 summer research experience. Please confirm your acceptance to our offer by emailing Lynese Wallace (lynesewa@bu.edu) on or before **Wednesday, March 11, 2015**. Also, please do not hesitate to contact us with questions regarding the program.

We look forward to meeting you this summer!

Very truly yours,

<image002.png>
William Cruikshank, Ph.D.
Director, STaRS summer research program

<image003.jpg>

Linda E. Hyman, Ph.D.
Associate Provost, Graduate Medical Sciences

Brittany Martin: Travel award ($500) to attend the Dr. Sidney A. McNairy, Jr. Student Symposium 2015

Subject: Re: Travel Award - Dr. Sidney A. McNairy, Jr. Student Symposium
Reply-To: stephen.i.ekunwe@jsums.edu

Congratulations! Forward this to Dr. Gomez to see if they have money to pay for this before we try to hurry up to do anything from the JSU end.

Ekunwe.

On Thu, Mar 5, 2015 at 4:42 PM, Brittany Martin <martin.brittany94@yahoo.com> wrote:

Sent from my iPhone

Begin forwarded message:

From: "Croft, Cheryl" <ccroft@cau.edu>
Date: March 5, 2015 at 4:36:45 PM CST
To: Brittany Martin <martin.brittany94@yahoo.com>
Cc: "crgomez@umc.edu" <crgomez@umc.edu>
Subject: Travel Award - Dr. Sidney A. McNairy, Jr. Student Symposium

Greetings:

On behalf of the Center for Cancer Research and Therapeutic Development, I am pleased to inform you that you have been selected to receive a travel award and to give an oral student presentation at the Dr. Sidney A. McNairy, Jr. Student Symposium 2015 being held on March 16, 2015. The total presentation should be 20 minutes long – 15 minutes for the actual presentation and 5 minutes for oral discussion. You will also receive a travel award reimbursement of ***up to*** $500 with receipts. Please contact either Ms. Cheryl Croft, ccroft@cau.edu, at (404) 880- 6741 or Ms. Martha Edwards, medwards@cau.edu, at (404) 880- 6755, for further information regarding any forms that you may need to complete beforehand. If for any reason you are unable to commit to giving the oral presentation, please advise us ***no later than*** Monday, March 9, 2019.

I wish you the best of luck and look forward to seeing you at the *Dr. Sidney A. McNairy, Jr. Student Symposium*.

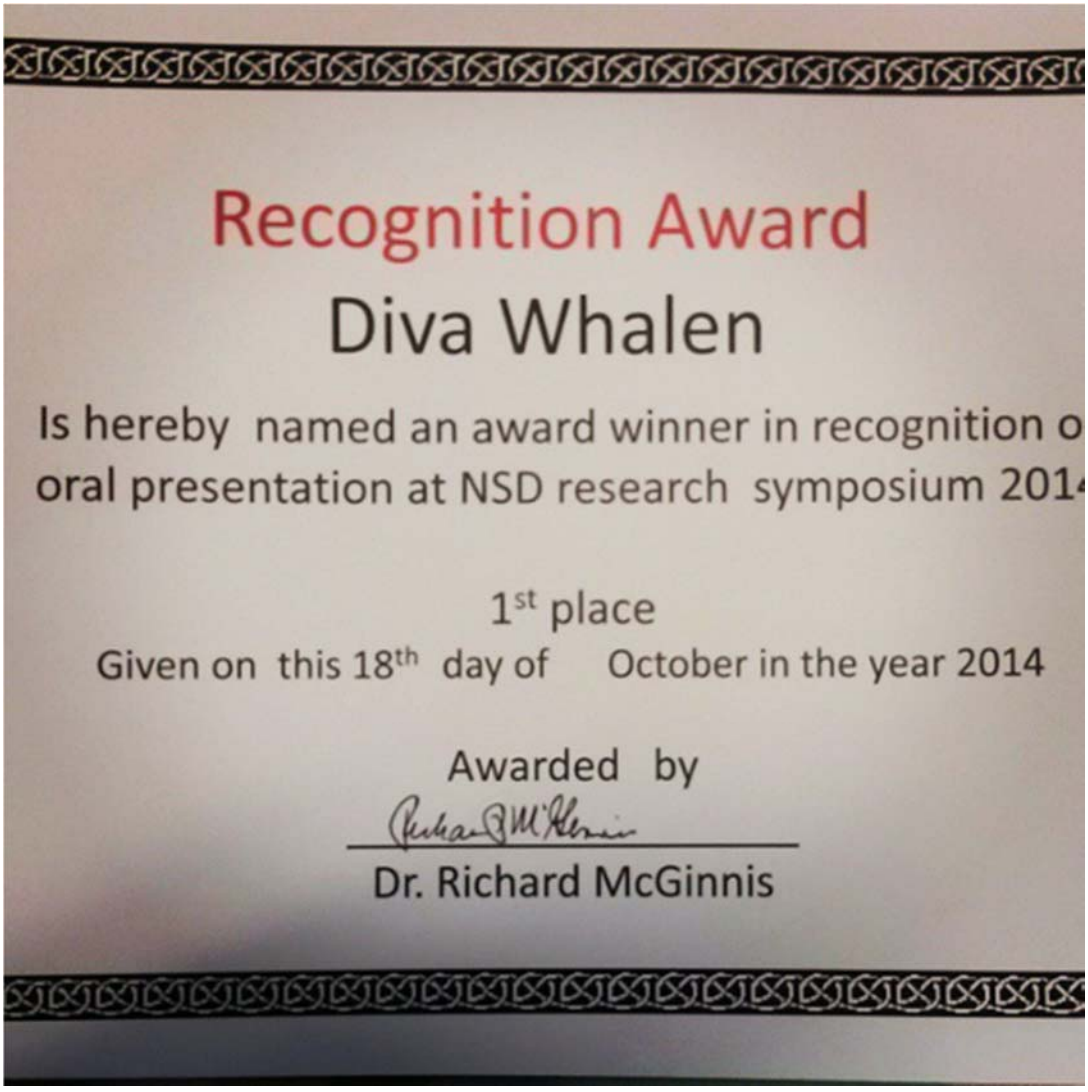
Best regards,

Shafiq A. Khan

Director, CCRTD

2

Diva Whalen: TC Student Government President, 1st place Oral Presentation 2014



Diva Whalen: Travel Award ($2,400) UMMC-HBCU PCa Training Program.



August 4, 2015

Dear Diva:

It is our pleasure to inform you that you have been selected as recipient of the 2015 Travel Award given by the Mississippi Prostate Cancer HBCU Undergraduate Research Training Program. Supported by the U.S. Department of Defense Prostate Cancer Research Program, you will receive a $2,400 check. This award is given to you in recognition of your outstanding participation at the Arizona Sigma Xi conference with your work "The Effects of Synthetic Stilbenes on Metastasis Associated Protein 1 (MTA1) Levels In Prostate Cancer Cells", developed by you in Dr. Anait Levenson' s laboratory during the Summer of 2014 as fellow of our Summer Training Program.

In addition to congratulating you by being the awardee of this travel award, we would like to wish you the best as an entering Graduate Ph.D. Student in Biochemistry and Cancer Biology at the Meharry Medical College in August of the present year. Those accomplishments are the best representation of our programmatic mission which is to help promote the generation of a cadre of top-caliber minority scientists and physicians with a specific interest in prostate cancer research, prevention, diagnosis and care. Our congratulations also go to the outstanding mentorship team at Tougaloo College and the University of Mississippi Medical Center – Cancer Institute.

Please notify Ms. Freda K. Turpeau at fturpeau@umc.edu by August 10, 2015 if you are willing to accept this award. If you are withdrawing your fellowship, please sign a letter of withdrawal and send it to Freda K. Turpeau, UMMC Cancer Institute, 2500 North State Street, Jackson, MS 39216.

Again, congratulations on your travel award. Please direct any questions to Ms. Freda K. Turpeau at fturpeau@umc.edu or (601) 815-6802.

Fondly,

Christian R. Gomez

Christian R. Gomez, Ph.D. Program Director
Mississippi Prostate Cancer HBCU Undergraduate Research Training Program
Associate Professor in Pathology and Radiation Oncology
Cancer Institute
University of Mississippi Medical Center
2500 N. State St., Suite G657
Jackson, MS 39216
Tel: 601-815-3060
Fax: 601-815-6806
Email: crgomez@umc.edu

CC: Jinghe Mao, Stephen Ekunwe, Anait Levenson, Srinivasan Vijayakumar, Roy Duhé, Richard McGinnis, Beverly Wade Hogan, Asoka Srinivasan, Bianca Garner

Adesuwa Ekunwe 2017 Naval Research Laboratory Summer Research for HBCU/Minority Institutions

Internships and Academic Seminars The Washington Center

1333 16th Street, N.W.
Washington, D.C. 20036-2205
T 202 238 7900 F 202 238 7700
www.twc.edu | info@twc.edu

Hello,

Congratulations again on being selected for the 2017 Naval Research Laboratory (NRL) Summer Research Program for Historically Black Colleges & Universities/Minority Institutions (HBCU/MI).

The attached logistics packet includes important information regarding travel, housing and stipend for this internship experience. Your NRL Internship begins on **May 30, 2017**, and ends on **August 4, 2017**. If you are planning to use arranged housing at the Residence Inn located in Alexandria, VA (more details included in the packet), you may check in on **May 29** and check out on **August 5**.

As a participant in this program, you are expected to intern for **the full 10-week program**. Interns will typically work between 8:00am and 4:30pm, Monday through Friday, and no work will be required on the weekends. Interns are expected to work each day except July 4, which is a federal holiday. There is no accrued vacation or sick leave for interns in this program. Optional social events may be offered on the weekends to promote team building and networking, and to help you make the most of your Washington, D.C., and NRL experience.

As an undergraduate student, your total pre-tax summer stipend will be **$8,300**.

- If you elected to stay at the Residence Inn, **$2,500** will be deducted from your total stipend **($500/stipend payment)**. If you requested Residence Inn parking, **$5 per night** will be deducted from your stipend.
- The stipend is earned and payable over the term of the internship.
- Payments are made semi-monthly by direct deposit on **the 15th and the last business day of each month**.
- Your stipend will be distributed equally over **5 pay periods starting on June 15 and ending on August 15.** *Please note that your first stipend is distributed 17 days after you arrive in D.C., so plan your finances accordingly, and contact TWC in advance if you have any concerns.*
- Full stipend details are included in your logistics package.

Please sign the bottom of this page confirming that you intend to participate in the program this summer and that you understand your summer stipend. Once signed, scan this letter and e-mail it to Dustin Harris at dustin.harris@twc.edu. Let me know if you have questions after reviewing the attached logistics packet. We look forward to working with you this summer!

Best regards,
Dustin Harris

I Adesuwa Ekunwe have read the 2017 Student Logistics Package and wish to commit to participating in the 2017 Naval Research Laboratory Summer Research Program for Historically Black Colleges & Universities/Minority Institutions.

Signature Adesuwa O. Ekunwe Date 5/9/17

Angel Garcia: NSD Research Symposium 2015 second place poster presentation award



Recognition Award

Angel Garcia

is hereby named an award winner in recognition of Poster presentation (session 1) at NSD Research symposium 2015

Second place

Given on this 16th day of October in the year 2015

Awarded by

Dr. Richard McGinnis, Dean of Natural Sciences

Angel Garcia: 13th Annual Mississippi College Undergraduate Research Symposium, Tougaloo College second place poster award



Tougaloo College - Mississippi College
Undergraduate Research Symposium

Certificate of Achievement

is awarded to

Angel Garcia

for presentation of original research

"So easy it seemed once found which yet unfound most have thought impossible"
- John Milton

Jointly organized by TC Council on Undergraduate Research and MC Academic Research Committee

Shaila Khan
TC Chair and Co-Chair

April 7, 2016

David A. Magers
MC Chair



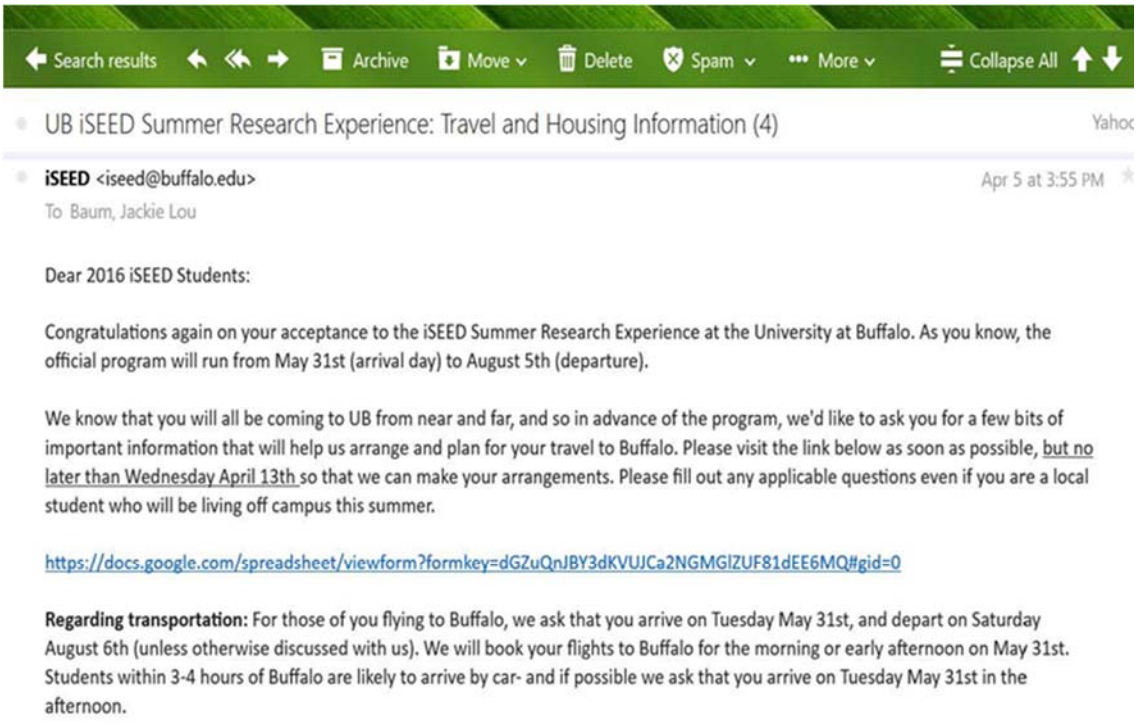
13th Annual
Tougaloo College - Mississippi College
Undergraduate Research Symposium

2nd
Place

NSD (Biology)
POSTER AWARD

April 7, 2016

Angel Garcia: iSEED Summer Research Experience at the University at Buffalo



Search results | Archive | Move | Delete | Spam | More | Collapse All

UB iSEED Summer Research Experience: Travel and Housing Information (4) Yahoo

iSEED <iseed@buffalo.edu> Apr 5 at 3:55 PM

To Baum, Jackie Lou

Dear 2016 iSEED Students:

Congratulations again on your acceptance to the iSEED Summer Research Experience at the University at Buffalo. As you know, the official program will run from May 31st (arrival day) to August 5th (departure).

We know that you will all be coming to UB from near and far, and so in advance of the program, we'd like to ask you for a few bits of important information that will help us arrange and plan for your travel to Buffalo. Please visit the link below as soon as possible, but no later than Wednesday April 13th so that we can make your arrangements. Please fill out any applicable questions even if you are a local student who will be living off campus this summer.

https://docs.google.com/spreadsheet/viewform?formkey=dGZuQnJBY3dKVUJCa2NGMGlZUF81dEE6MQ#gid=0

Regarding transportation: For those of you flying to Buffalo, we ask that you arrive on Tuesday May 31st, and depart on Saturday August 6th (unless otherwise discussed with us). We will book your flights to Buffalo for the morning or early afternoon on May 31st. Students within 3-4 hours of Buffalo are likely to arrive by car- and if possible we ask that you arrive on Tuesday May 31st in the afternoon.

Jamal Keyes: 2016 Summer Research experience for undergraduates, RISE (Research in Science and Engineering) at Rutgers

RiSE at Rutgers
Research in Science and Engineering

February 10, 2016

Dear Jamal,

Congratulations! We are delighted to accept you to our 2016 summer research program, RiSE (Research in Science and Engineering) at **Rutgers** through the NSF **Research Experience for Undergraduates in Cellular Bioengineering (REU-CB)**. You should feel very proud of yourself -admission is highly selective. We are impressed with your credentials and expect that you will have a rewarding, exciting, and enjoyable summer.

Please let us know no later than, **February 24, 2016 by 9:00 AM,** if you accept our offer by completing the form in the body of our e-mail and replying to: **rise@rci.rutgers.edu**.

Please note:

- You will be matched with one of the Cellular Bioengineering faculty mentors. On our application, you specified your research interests and may have answered an optional question to indicate prospective faculty mentors. We will use the information from your application as a guide to your placement. If you wish to update that information, please do so in your reply form. Every effort will be made to match you with one of your preferred choices.
- You will receive a generous stipend of $5,000 for 10 weeks. We also provide a preparatory course for the GRE (valued at $900), free housing in on-campus apartments, and travel reimbursement up to $500.
- RiSE/REU-CB dates are May 31 to August 5, 2016. Housing check-in will be Sunday, May 29, 2016. (Anything later is by special arrangement only).

Once you accept our offer, you are expected to withdraw applications from any other summer opportunities.

Participation in RiSE is a full-time commitment. Therefore, you should not plan to take courses or accept additional employment while in the program.

As a RiSE Scholar, you will be eligible for our prestigious **SU**mmer Pipeline to Excellence at Rutgers **Grad**uate (**SUPER Grad**) fellowship program if you return to Rutgers for graduate study. Learn more here.

If you have any questions, do not hesitate to contact us at **848-932-6584** or **rise@rci.rutgers.edu**. We are confident you will have a great summer and are excited at the prospect of welcoming you to Rutgers!

Sincerely,

Director, NSF REU in Cellular Bioengineering: From Biomaterials to Stem Cells
Shreiber@rci.rutgers.edu

Evelyn S. Erenrich, Ph.D.
Director, RiSE at Rutgers
Erenrich@rutgers.edu

Timera Brown: 2016 Research experience for undergraduates at Vanderbilt Institute for Nanoscale Science and Engineering

VANDERBILT UNIVERSITY

Vanderbilt Institute of Nanoscale Science and Engineering

February 18, 2016

Timera Brown
P.O. Box 477
Richton, MS 39476-0477

Dear Timera:

I am pleased to inform you that you have been accepted as a summer research intern in the Vanderbilt Institute for Nanoscale Science and Engineering (VINSE) NSF funded summer REU program.

Participants in the ten-week program will receive a $5,000 stipend, campus housing at no additional cost, a meal allowance, and up to $500 to cover the cost of travel to and from Nashville. Scientifically, participation in the program will provide you with a true interdisciplinary research experience in an environment where physicists, chemists, biologists, and all engineers collaboratively solve problems and create new scientific understanding. You will work directly with VINSE faculty members and their research groups and have access to the state-of-the-art VINSE laboratories, which are shared facilities available to all authorized users. The 10 week program will also feature weekly informal seminars, workshops, field trips and a final banquet and poster competition, at which you will have the opportunity to compete with your fellow interns for travel funds to present at a national conference, such as the American Chemical Society annual meeting.

Vanderbilt represents one of the most exciting academic environments in the United States. We are ranked #15 in the US News and World Report rankings, and despite our small size (~6800 undergraduates and ~6000 graduate and professional students) Vanderbilt is ranked in the top 25 in total U.S. federal funding. We are one of only 13 universities that rank in the top 25 in both of these categories, which is quite an achievement. The Vanderbilt campus itself is centrally located in Nashville, being just one mile from downtown, which is one of the most vibrant and cosmopolitan mid-sized cities in the United States. So we think you will really enjoy your time on our campus!

These awards are highly competitive and so you are in a select group chosen to receive this award. There are, however, several qualified alternates and so we would appreciate it if you would notify us of your decision of acceptance as soon as possible and no later than February 25, 2016.

We look forward to your participation in this exciting research program and joining the team of faculty, researchers and graduate students exploring the frontiers of nanoscale science and engineering.

Sincerely,



Clare McCabe
Director, Vanderbilt REU Program in Nanosciences,
Professor of Chemical and Biomolecular Engineering,
Professor of Chemistry

PMB 350106 • 2301 Vanderbilt Place • Nashville, Tennessee 37235-0106 • tel 615-322-1289 • www.vanderbilt.edu/vinse

Timera Brown: 2017 Strong Children's Research Center's Summer Program at University of Rochester Medical Center



March 8, 2017

Timera Brown
500 West County Line Rd.
Jackson, MS 39174

SENT VIA E-MAIL

Dear Timera:

Congratulations! You have been selected for a position in the 2017 Strong Children's Research Center's Summer Program at the University of Rochester Medical Center. This year's application process was highly competitive and the SCRC has selected you due to your strong academic performance and interest in research.

Please let us know by Wednesday, March 29, 2017 if you will be accepting or declining this position. Applicants who participate in the Summer Program will be paid $3,000 for the 10-week program. Students are paid in 4 equal installments (June 15th, July 1st, July 15th, and August 1st). The SCRC provides on-campus housing free of charge to all individuals who are enrolled in the Summer Program - if you accept the Summer Program position, please indicate whether you wish to take advantage of this option. Please note that your travel expenses will be your financial responsibility.

If you accept the position, you will be notified of your mentor at a later date.

The program officially begins Tuesday, May 30, 2017 and the SCRC's expectation is that you will be able to present your research findings at the Poster Symposium on August 3, 2017. If you are a medical student and will need to begin the program after its start date, we will speak with your mentor and mutually decide if a shortened program will be acceptable for your circumstances. Please understand that your stipend will reflect the shortened length of your participation in the program.

Again, congratulations on your selection. If you have any questions, please do not hesitate to contact me at 585-273-2977 or scrc@urmc.rochester.edu. We look forward to hearing from you.

Regards,

Erik Abell
Administrator
Strong Children's Research Center

Ornella Amoah: Internship at Lilly Company

March 21, 2017

ORNELLA AMOAH
JSU BOX 18412 1400 J.R. Lynch St.
Jackson, Mississippi 39217

Dear ORNELLA,

Congratulations! We're excited to offer you an internship as a(n) Manufacturing Science Intern on behalf of Eli Lilly and Company ("Lilly"). We look forward to having you on our team. Our people are our most valuable asset. This offer includes an opportunity for professional challenge and growth, an attractive compensation package, and other intern benefits described below.

Internship Compensation

At Lilly , intern positions are salaried and pay is provided semi-monthly into your designated checking or savings account. Your pay for the 12 week internship will be approximately $11,000.00 or $2070.00 semi-monthly. Your start date will be May 24, 2017 with an end date of August 11, 2017.

Intern Benefits

Lilly's Intern program offers a number of additional key benefits that distinguish our program from our competitors. Participating students consistently rank our program as an exceptional opportunity when viewed from professional, economic and social perspectives. Below is a summary of some of the outstanding opportunities afforded Lilly interns.

- Corporate Housing: Lilly will provide significant financial support if you reserve housing through our Corporate Housing vendor. (Note: Corporate Housing is a taxable benefit.)
- Community Activities: Lilly interns are invited to several entertainment events at local venues throughout the Indianapolis community such as dinners with company leaders and sporting events.
- Corporate Activities: Interns are invited to sessions with company leaders to hear about our plans for the future and to discuss important issues.
- Eli Lilly Federal Credit Union Membership: As an intern, you are invited to join our on-site credit union and enjoy all of the financial privileges afforded to other Lilly members.
- Lilly Training and Development Opportunities: Lilly provides company-sponsored training for our interns based on availability and position requirements.
- Roundtrip Travel to Start/End Internship: Lilly will provide you with mileage reimbursement if you drive your personal car from your school to your summer assignment. If you need airline transportation for your internship, our Travel Services will provide you with a single, roundtrip, economy class ticket to/from your school. (Note: We strongly recommend that you bring your personal car in order to take full advantage of the area.)

Offer Contingencies:

As a part of our employment process, your offer and anticipated start date are contingent upon the following conditions:

- Successful completion of a drug screen evaluation provided by the company

Appendix #14: Postgraduate Education

Diva Whalen accepted in the School of Graduate Studies and Research at Meharry Medical College

MEHARRY®
MEDICAL COLLEGE

Maria F. Lima, Ph.D.
Dean, School of Graduate Studies & Research

May 26, 2015

Ms. Diva Whalen
1231 Cherry Street
Clinton, MS 39056

Dear Ms. Whalen:

I am pleased to inform you that your application for admission to the doctoral program in biomedical sciences, in the School of Graduate Studies and Research at Meharry Medical College has been approved for the 2014 Fall Term. New student registration/orientation is scheduled for Thursday and Friday August 6-7, 2015 at 8:00 A.M.

Please be advised that acceptance as a member of the doctoral program is contingent upon final verification of all of your academic credentials including: an official college transcript indicating receipt of the Bachelor's degree, physician documentation of immunizations and a physical examination within the last year, and successful completion of a criminal background check. Official transcripts from all universities/colleges attended must be forwarded to the Office of Admissions and Recruitment no later than June 26, 2015.

Eligible graduate students (U.S. Citizens / Permanent Residents / Green Card Holders) are provided a predoctoral fellowship that covers full tuition and fees and support for living expenses. This support may be continued in further years of the Ph.D. program. From the second year of matriculation and beyond, students are encouraged to submit applications to federal and private agencies for pre-doctoral training awards. You will hear more about these opportunities during our Fall Orientation. If you plan to matriculate in the School of Graduate Studies and Research for Fall 2015, please sign this acceptance letter and submit a pdf version of the letter with signature to the Office of Admissions and Recruitment via fax at (615) 327-6228 / via email at admissions@mmc.edu/ or via postal mail no later than June 5, 2015.

On behalf of the students, faculty, and administration in the School of Graduate Studies and Research, I bid you an enthusiastic welcome to the Meharry family. We look forward to hearing from you soon.

Sincerely,

Maria de Fatima Lima, Ph.D.
Dean, School of Graduate Studies and Research

cc: Evangeline Motley, Ph.D., Associate Dean, School of Graduate Studies and Research
Malynda E. Gaines, M.Ed., Student Officer, School of Graduate Studies and Research
Roslyn White, Director, Office of Admissions and Recruitment

1005 Dr. D.B. Todd Jr. Boulevard
Nashville, Tennessee 37208-3599
T: 615.327.6533 • F: 615.321.2933 • www.mmc.edu

Charles Phillips joined the School of Graduate Studies in the Health Sciences at UMMC

THE UNIVERSITY OF MISSISSIPPI MEDICAL CENTER

School of Graduate Studies
in the Health Sciences
2500 North State Street
Jackson, Mississippi 39216-4505
Phone (601) 984-1195
Fax (601) 815-9440

April 25, 2016

Charles Phillips
1212 CR 153
Coila, MS 38923

Dear Charles,

We are pleased to inform you that you have been accepted into the School of Graduate Studies in the Health Sciences (SGSHS) at the University of Mississippi Medical Center for the fall semester beginning August 2016.

You have been awarded a graduate research stipend that provides both individual health insurance and a stipend of approximately $24,000/year. **Please note: Stipends are not tax exempt.**

You have also been selected to receive the Dean's Scholarship for the School of Graduate Studies in the Health Sciences. This scholarship pays tuition costs for up to five years of your graduate education. The Office of Student Financial Aid will contact you regarding the next step in the process.

To confirm your acceptance, the attached letter of intent must be returned to the SGSHS office by email to smoulds@umc.edu or fax to 601-815-9440 within two weeks of the date of this letter.

Acceptance to the School of Graduate Studies is conditional; the Admission Committee may rescind an offer of acceptance if an applicant fails to maintain expectations upon which the acceptance was based. Examples include, but are not limited to, failure to complete prerequisites or other course work and degrees in progress, patterns of unprofessional behavior, and incidents discovered in a criminal background check.

We welcome you to the University of Mississippi Medical Center and look forward to meeting you in the near future. **If you have questions prior to your arrival on campus, please contact the director of your graduate program dgrzybicki@umc.edu** or the Office of the Dean of the School of Graduate Studies in the Health Sciences (Email: **smoulds@umc.edu** or phone: 601-984-1632).

Sincerely,

Sydney Murphy

Sydney Murphy, Ph.D.
Assistant Dean, School of Graduate Studies in the Health Sciences

Cc: Debbie Saxon, Director of Budget and Institutional Resources
Carrie Cooper, Director of Student Financial Aid
Dr. Dana Grzybicki, Program Director, Pathology

Ansley Scott accepted at University of Arkansas for Medical Sciences College of Medicine

UAMS

COLLEGE OF MEDICINE

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Richard P. Wheeler, M.D.
Executive Associate Dean
wheelerrichard@uams.edu

James Graham, M.D.
Associate Dean
Undergraduate Medical Education
GrahamJames@uams.edu

OFFICE OF ACADEMIC AFFAIRS
4301 W. Markham St., #603
Little Rock, AR 72205-7199
501-686-8499
501-686-8160 (fax)
www.uams.edu/com

February 25, 2016

Ansley Scott
1634 Hawthorne Cove
Byram, MS 39272

Dear Ansley:

I take great pleasure in offering you a position in the 2016-17 entering Freshman medical class.

You are to be commended for superior performance during your premedical years. In fairness to applicants who will not be selected, we reserve the right to review your subsequent academic performance, since a deterioration of work may necessitate reconsideration of your acceptance. In particular, failure to complete your pre-matriculation requirements prior to enrollment in August may cause you to be denied admission. The offer of acceptance is contingent upon the completion of a criminal background check with *acceptable* results. We do not anticipate that reconsideration will be needed and we welcome you to the Class of 2020.

Please complete and return the enclosed "Acceptance Acknowledgement Form" within *two weeks* to accept your position in the next freshman medical class. If you need to discuss pre-matriculation requirements or have other questions, please contact Tom South, Assistant Dean of Admissions, or Jeanne McLachlin, Director of Admissions and Recruitment.

As you may know, there are certain physical and cognitive demands related to medical school. These are described in our "Technical Standards," a copy of which is enclosed. We are committed to reasonably accommodating individuals with disabilities who can, with these accommodations, succeed in completing the medical college curriculum. Our Student Affairs Office is available to discuss any concerns you have about meeting the Technical Standards with or without accommodation. A *Certification of Technical Standards* is enclosed. **Please sign and return it with your response to this offer of acceptance.**

We are proud of our reputation as a college that emphasizes a superb educational experience for medical students. We know that much of our reputation is due to exceptional students like you. Congratulations on this great success! We are pleased to have you as a member of our student body.

Sincerely,

Richard P. Wheeler, M.D.
Professor of Medicine
Executive Associate Dean for Academic Affairs

Anthony Keyes: accepted to the Chemistry Ph.D. Program of the College of Natural Sciences and Mathematics at the University of Houston

UNIVERSITY of HOUSTON | CHEMISTRY

myUH (PeopleSoft) ID: 1676083
Residency Status: Non Texas Resident
Admission Term: Fall 2017

Anthony Keyes
1314 Diamond Rim Dr
Colorado Springs, CO 80921
US

Dear Anthony Keyes,
I am very pleased to inform you of your admission to the Chemistry Chemistry, PHD Graduate Program of the College of Natural Sciences and Mathematics at the University of Houston for fall 2017. We look forward to having you join us and contribute to our dynamic and stimulating intellectual environment. Details of the UH Chemistry Graduate Degree Programs can be found at our Department's website (www.chem.uh.edu).

You have received an NSF Fellowship. This is a fantastic honor. Congratulations! The NSF Fellowship will be administered through the University of Houston per the requirements of the NSF. Taking into account your NSF Fellowship, your support in our program in years 1-5 will be as follows:

Years 1 and 2. Your NSF Fellowship will provide you with $2833/month ($34,000 total). In addition, you will receive a Houston Endowment Recruitment Fellowship that will provide you with $5,000 per year, and a Presidential Fellowship that will provide you with $2,000 per year. If you choose to work in the research group of Dr. Eva Harth, you will be awarded a Polymer Center Fellowship of $6000/year. Thus, in years one and two, the total stipend before taxes is $47,000. According to the NSF Fellowship guidelines, which we strictly abide by, the University is required to exempt you from paying tuition and fees normally charged to students of similar academic standing.

Year 3. Your NSF Fellowship will provide you with $2833/month ($34,000 total). In addition, you will receive a Houston Endowment Recruitment Fellowship that will provide you with $5,000 per year, and if you choose to work in the research group of Dr. Eva Harth, you will be awarded a Polymer Center Fellowship of $8000/year. Thus, in year three, the total support before taxes is $47,000. Again, according to the NSF Fellowship guidelines, the University is required to exempt you from paying tuition and fees normally charged to students of similar academic standing.

Years 4-5 in Harth's Research Group. If you choose to work in Dr. Harth's research group, your primary support will come from her funds working as a Research Assistant (RA) in her group. She has agreed to pay you $2,500/month ($30,000) as an RA in her group. In years four and five, your Houston Endowment Recruitment Fellowship will continue at $5,000/year, and you will be awarded a Polymer Center Fellowship of $9,000/year. As an RA and full-time student (9 credit hours per long semester required), you will qualify for Texas in-state tuition. You will be given a Graduate Tuition Fellowship (GTF) to cover your in-state tuition and fees as a full-time student. As an RA in Dr. Harth's group, your total compensation in years three and four will be $44,000/year before taxes.

Continuation of your Fellowships are contingent on enrollment as a full-time student in the fall and spring semesters (9 credit hours per semester), maintaining a minimum cumulative grade point average of 3.00 each semester, and satisfactory progress toward the Ph.D. degree in Chemistry.

Brittany Martin: accepted to the Master of Science Biomedical and Health Sciences Program at the University of Alabama at Birmingham

UAB SCHOOL OF HEALTH PROFESSIONS
Department of Clinical and Diagnostic Sciences

UAB SCHOOL OF MEDICINE
Cell, Developmental, & Integrative Biology

April 26th, 2017

Dear Brittany Martin,

Congratulations! I am pleased to inform you that you have been accepted to the M.S. Biomedical and Health Sciences Program at the University of Alabama at Birmingham. Your acceptance (or acceptance/continuance) is contingent upon the following:

A. Receipt of acceptance confirmation form postmarked by May 1st, 2017, indicating if you accept or decline this appointment (see attached). This form can be scanned and emailed or faxed back.
B. Completion of UAB Medical History Questionnaire and Physical Examination by student's physician, to include required immunizations, followed by satisfactory review of information by the UAB Medical Center Student Health Service.
C. Successful completion of a background check and drug screening prior to the time of enrollment in classes.

Your official acceptance to UAB will come from the Graduate Admissions office. Currently enrolled and newly admitted students will be sent registration information by the Office of Registration and Academic Records along with a notice of the earliest date and time you may register. Classes will begin on June 5th, 2017.

A mandatory orientation session for the M.S. Biomedical and Health Sciences Program will be held June 2nd, 2017 before your first day of classes. You will receive information concerning this orientation in the WELCOME email.

We will be contacting you shortly to give you more information about orientation, immunizations, and registration. **Please complete the attached confirmation form and return to Reginald Young at bo11@uab.edu.** If you have any questions you may contact Rachel Burchfield, Student Counselor by phone at (205) 975-7639 or email at reburchf@uab.edu.

We look forward to having you with us and anticipate for you a full, but rewarding course of study.

Sincerely,

Kara L. Caruthers, MSPAS, PA-C

Assistant Professor, Physician Assistant Program

Co-Director, M.S. Biomedical and Health Sciences Program

Mark O. Bevensee PhD, Associate Professor

Director, Renal Module, SOM Preclerkship Curriculum

Co-Director, M.S. Biomedical and Health Sciences Program

Joshua Agee acceptance letter from the School of Graduate Studies in the Health Sciences at the University of Mississippi Medical Center



School of Graduate Studies
in the Health Sciences
2500 North State Street
Jackson, Mississippi 39216-4505
Phone (601) 984-1195
Fax (601) 815-9440

June 9, 2017

Joshua Agee
879 William Boulevard
Apt 12G
Ridgeland, MS 39157

Dear Joshua,

We are pleased to inform you that you have been accepted into the School of Graduate Studies in the Health Sciences (SGSHS) at the University of Mississippi Medical Center for the fall semester beginning August, 2017.

To confirm your acceptance, the attached letter of intent must be returned to the SGSHS office by email to smoulds@umc.edu or fax to 601-815-9440 within two weeks of the date of this letter.

Acceptance to the School of Graduate Studies is conditional; the Admission Committee may rescind an offer of acceptance if an applicant fails to maintain expectations upon which the acceptance was based. Examples include, but are not limited to, failure to complete prerequisites or other course work and degrees in progress, patterns of unprofessional behavior and incidents discovered in a criminal background check.

We welcome you to the University of Mississippi Medical Center and look forward to meeting you in the near future. **If you have questions prior to your arrival on campus, please contact the director of your graduate program mjryan@umc.edu** or the Office of the Dean of the School of Graduate Studies in the Health Sciences (Email: **smoulds@umc.edu** or phone 601-984-1195).

Sincerely,

Sydney Murphy

Sydney Murphy, Ph.D.
Assistant Dean, School of Graduate Studies in the Health Sciences

Cc: Dr. Michael Ryan, Program Director, MS Biomedical Sciences

Tatyana Givens acceptance letter for Pharmacy Program

MERCER UNIVERSITY

COLLEGE OF PHARMACY

Dear Tatyana:

Congratulations on your acceptance into Mercer's Doctor of Pharmacy Class of 2020!

The first items required to secure your position in the Mercer Doctor of Pharmacy Program are responses to the Enrollment Information form (http://tinyurl.com/MUPharmD2020) and a non-refundable deposit of $500.00 to this office by **February 3, 2016**.

A second $250 deposit will be due on **May 1, 2016**. Seven hundred and twenty-five dollars of the deposit will be credited toward your first semester's tuition while the remaining $25 will satisfy the University's matriculation fee.

Additional details regarding your acceptance - including any conditions that the Admissions Committee has placed on your acceptance - are included in the hard copy acceptance letter that is being sent to you. A copy of the New Doctor of Pharmacy Student Enrollment Checklist that includes items that you will need to complete between now and when you enroll in August will be included in the letter packet.

Please let us know if we can assist you with any part of the enrollment process. We look forward to your joining the Mercer community next August!

Best Regards,
Jordana

Jordana S. Berry, MBA '04
Director of Admissions and Student Affairs
Mercer University College of Pharmacy
Direct: 678.547.6182
Fax: 678.547.6518
berry_js@mercer.edu

Courtney Mangum: accepted at the University at Buffalo Jacobs School of Medicine and Biomedical Sciences, the 2017 First-Year Medical Class

From: jjrosso@buffalo.edu
Subject: Acceptance to the UB Medical School
Date: November 11, 2016 at 10:18:21 AM EST
To: courtmangum@gmail.com
Cc: jjrosso@buffalo.edu

Dear Courtney:

The Admissions Committee of the University at Buffalo Jacobs School of Medicine and Biomedical Sciences is pleased to offer you a place in our 2017 First-Year Medical Class.

This event culminates many long years of dedication and commitment on your part. We feel honored to share this proud moment with you and your family.

Attached is an instruction sheet with pertinent information to be signed by you. Please mail this back to us within 1 week. In addition, please submit your $100 tuition deposit to officially hold your seat.

Congratulations and warm wishes for a successful medical career.

Sincerely,

Charles M. Severin, M.D. Ph.D.
Associate Dean
Medical Education & Admissions

James J. Rosso
Admissions Advisor

Timera Brown acceptance to medical School at Warren Alpert School of Medicine of Brown University

BROWN
Alpert Medical School

OFFICE OF ADMISSIONS

April 15, 2016

Timera L. Brown
P.O. Box 477
Richton, MS 39476

Dear Timera,

I am pleased to inform you that you have been selected for participation in the Early Identification Program (EIP) in conjunction with The Warren Alpert Medical School of Brown University. Congratulations!

Under this plan, you will continue your undergraduate course of study at Tougaloo College and spend at least one academic semester in residence at Brown University during your junior or senior year. During your semester at Brown University, your coursework must include one upper-level biology course with attainment of a grade of B or higher. This course can count toward the educational requirements noted below.

Your subsequent admission to the Medical School will be contingent upon the following:

- Sustained excellent academic achievement;
- Satisfactory completion of all premedical course requirements, achieving a B grade or higher in each of two biology courses (covering cell biology and genetics); additional upper-level work in biology is recommended.
- Satisfactory completion of all course requirements for the baccalaureate degree;
- Continued recommendation by the premedical advisory committee at your school;
- Documented verification of your complete academic record, showing your conferred degree.

We urge you to review both your graduation requirements at Tougaloo College and Brown's premedical requirements to ensure that you will fulfill the requirements of both institutions prior to your enrollment in medical school. The science courses that you are expected to master are outlined on the attached list. Your advisor can assist you in planning your course schedule for the remaining two years.

Your application will be reviewed in January of your senior year for formal admission to our Fall 2018 entering medical school class. At that time, you will receive instructions on submitting an application through the American Medical College Association Service (AMCAS). As an EIP candidate, there is no charge for this application. You will also be required to submit and successfully pass a criminal background check, which is a requirement for all entering medical students. Your acceptance of this offer of participation in the Early Identification Program must be confirmed in writing and sent to the Office of Admissions **before April 30, 2016.**

Brown University Warren Alpert Medical School Box G-M, Providence, RI 02912

Appendix #15: Regional and Scientific Meetings attended by trainees

2014 Sigma Xi Annual Meeting and International Research Conference attended by Diva Whalen

Actions
Diva Whalen
10/01/14
To: wendywhite2001@yahoo.com, bkelly@tougaloo.edu



2014 Sigma Xi Annual Meeting & International Research Conference
Registration Summary
November 6-9, 2014
(Student Events Nov. 7-8)
Renaissance Glendale Hotel
Glendale, Arizona USA
Date Submitted: 10/1/2014 7:09:22 PM (EDT)
Name: Diva Sarde Whalen
Registration Type: Student Registration
Total Amount Submitted: $195.00
Payment Method: Mailed Check

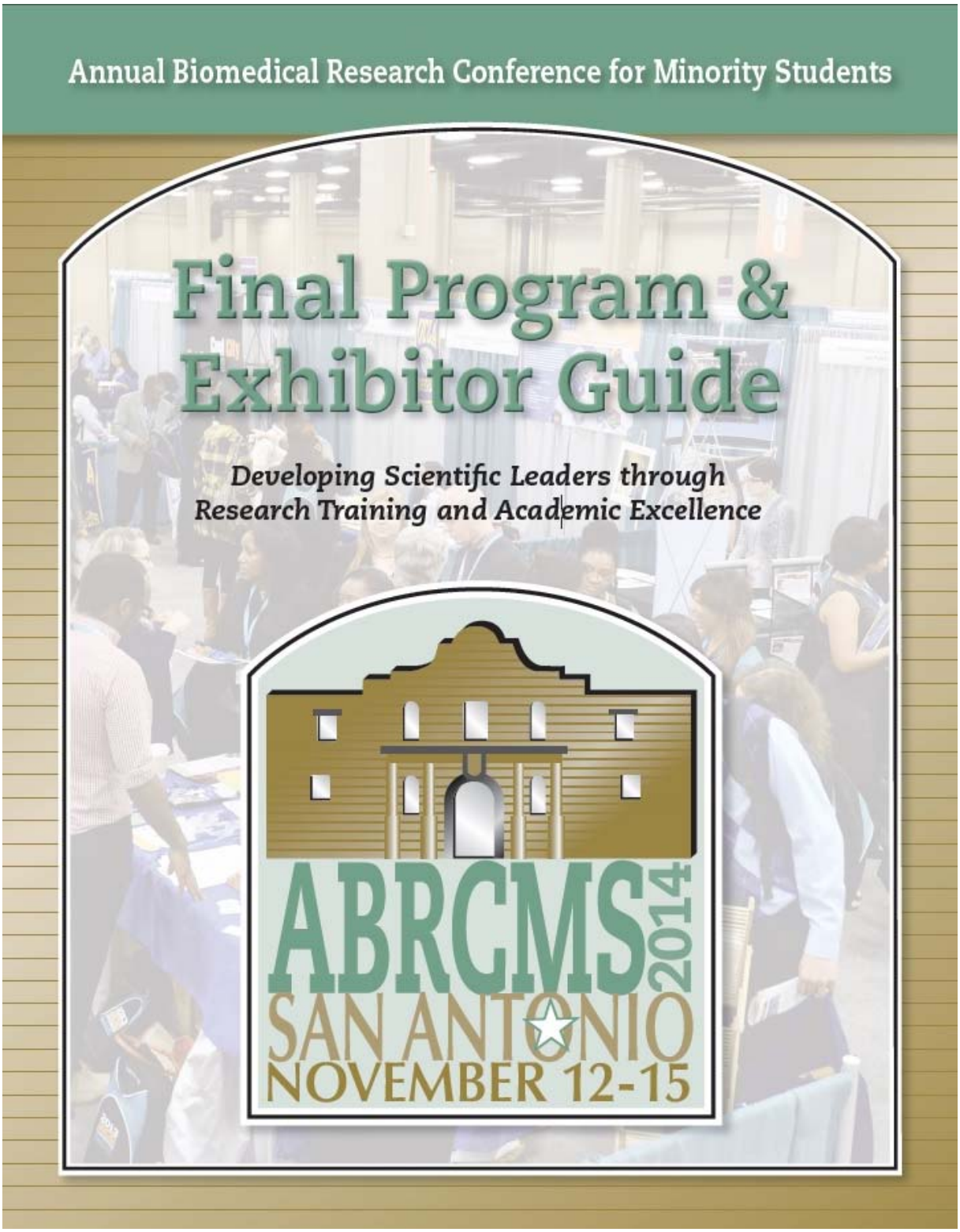
Please make check payable to 'Sigma Xi' and mail it to the address below along with a copy of this web page.

Your registration is only valid once your check is received.
Meeting Registration
Sigma Xi, The Scientific Research Society
P.O. Box 13982
Research Triangle Park, NC 27709

Thank you for your submission and we look forward to seeing you at the meeting!

Sincerely,
The Sigma Xi Administrative Office

2014 Annual Biomedical Research Conference for Minority Students: attended by Joshua Agee and Anthony Keyes



Author Index

O presentation denotes oral presentations

Abah, Theophilus	Social and Behavioral Sciences and Public Health: Public Health and Epidemiology	A030
Abangma, Yaya O.	Social and Behavioral Sciences and Public Health: Psychology	G032
Abdulkadir, Anisa A.	Physiology: Toxicology	A063
Abebe, Jonathan	Microbiology: Virology	F123
Abiona, Olubukola	Physiology: Pharmacology	G056
Abune, Lidya B.	Engineering, Physics and Mathematics: Material Sciences	B161
Acevedo, Jesus A.	Developmental Biology and Genetics: Genetics	D114
Acevedo-Mariani,	Frances M. Chemistry: Analytical Chemistry	G190
Aceves, Daisy	Social and Behavioral Sciences and Public Health: Psychology	G026
Aceves, Lorena	Social and Behavioral Sciences and Public Health: Sociology	C019
Acuna, Rosabril	Microbiology: Environmental Microbiology	G116
Adam, Amna T.	Cell Biology: Molecular Imaging	F212
Adams, Anita	Social and Behavioral Sciences and Public Health: Psychology	A037
Adams, Brandon P.	Biochemistry: Structural Biology	C181
Adamson, Elise G.	Engineering, Physics and Mathematics: Bioengineering	G155
Adaobi, Adaobi E.	Immunology: Immunology	F004
Addae, Gifty	Cancer Biology: Cancer Biology	D161
Addison, Shardae M.	Cancer Biology: Cancer Biology	B243
Adebayo, Ayobami A.	Developmental Biology and Genetics: Evolution and Developmental Biology	F182
Adebesin, Mobolanle	Physiology: Toxicology	B051
Adeleke, Ayobami	Neuroscience: Neurobiology	D049
Adeoye, Temitope F.	**Social and Behavioral Sciences and Public Health: Psychology**	**O045**
Adjakwah, Eric D.	Developmental Biology and Genetics: Evolution and Developmental Biology	G182
Adobaw, Brandford K.	Biochemistry: Structural Biology	E168
Agee, Joshua E.	Cancer Biology: Cancer Biology	D153
Agent, Alexander J.	Microbiology: Environmental Microbiology	F111
Agosto, Laura M.	Biochemistry: Biochemistry	A005
Aguilar Diaz de leon, Jesus S.	Chemistry: Physical Chemistry	A189
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Agyapong, Ama D.	Engineering, Physics and Mathematics: Nanotechnology	B148
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Agyingi, Smith E.	Microbiology: Bacteriology	G112
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Ahmed, Mohamed M.	Chemistry: Organic Chemistry	G197
Aikhuele, Ogbeide A.	Cancer Biology: Cancer Biology	F238
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Ailith, L'lerrét J.	Developmental Biology and Genetics: Developmental Biology	F175
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Aiwerioghene, Eseosa	Biochemistry: Biochemistry	C177
Akindahunsi, Oluwole O.	Cell Biology: Cell Biology	G015
Akinjiyan, Favour	Biochemistry: Biochemistry	B253
Akinnola, Kemi	Neuroscience: Neuroscience	G087
Alanis, Nanci	Social and Behavioral Sciences and Public Health: Psychology	F049
Alba-Rodriguez, Estefania J.	Physiology: Systems Biology	F062
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Alexander, Adriana K.	Cell Biology: Cell Biology	C153
Alexander, KayLee D.	Developmental Biology and Genetics: Developmental Biology	G179
Alexandre, Karlbuto	Biochemistry: Metabolism	F262
Alford, Victoria	Microbiology: Environmental Microbiology	G115
Alhussien, Alaa	Chemistry: Inorganic Chemistry	D135
Ali, Haseena	Social and Behavioral Sciences and Public Health: Public Health and Epidemiology	D018
Ali, Issa	Molecular and Computational Biology: Bioinformatics	F104
Ali, Zakariya J.	Microbiology: Environmental Microbiology	A127
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Allawala, Anusha	**Neuroscience: Neurobiology**	**O037**
Almaguer, Joey	Developmental Biology and Genetics: Genetics	F179
Alvarado Rodriguez, Edrick J.	Microbiology: Environmental Microbiology	B126
Alvarez, Alberto	Physiology: Physiology	G060

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Jasper, Robyn	**Cell Biology: Cell Biology**	**O059**
Jasper, Shanese L.	Microbiology: Bacteriology	F009
Jenkins, Andrea M.	Immunology: Immunology	E090
Jennings, Jasmine I.	Physiology: Physiology	C041
Jideama, Stephanie C.	Social and Behavioral Sciences and Public Health: Public Health and Epidemiology	E021
Jimenez, Angel G.	Neuroscience: Neurobiology	E060
Jimenez, David	Developmental Biology and Genetics: Genetics	C118
Jimenez, Isabel A.	Immunology: Immunology	C094
Jimenez, Vanessa	Neuroscience: Neuroscience	B006
Jocelin, Sabine	Biochemistry: Biochemistry	G268
Johnson, Abraham N.	Cell Biology: Cell Biology	E149
Johnson, Da'Kuawn	Microbiology: Bacteriology	G109
Johnson, Dante' T.	Biochemistry: Biochemistry	E177
Johnson, Darren C.	Immunology: Immunology	C091
Johnson, Erin	**Molecular and Computational Biology: Genomics**	**O033**
Johnson, Jalen I.	Engineering, Physics and Mathematics: Material Sciences	E098
Johnson, Jevon D.	Engineering, Physics and Mathematics: Mathematics	B154
Johnson, Kendra V.	Biochemistry: Biomolecules	A255
Johnson, Michelle	Neuroscience: Neurobiology	F024
Johnson, Nia Cancer	Biology: Cancer Biology	B230
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Joiner, Breanna J.	Cancer Biology: Cancer Biology	F241
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Jones, Derick D.	Chemistry: Analytical Chemistry	C014
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Jones, Ilenna S.	Neuroscience: Neurobiology	E050
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Joseph, Serena	Microbiology: Parasitology	F133
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Joshi, Piyush	Neuroscience: Neurobiology	F087
Jusino, Shirley	Microbiology: Virology	G007
Kamaha, Roussel	Engineering, Physics and Mathematics: Bioengineering	F148
Kapadia, Sahista	Chemistry: Organic Chemistry	F191
Karanja-Senge, Wanjiru	Neuroscience: Neurobiology	D047
Katz, Brittany M.	Neuroscience: Neurobiology	A065
Kay, Amber M.	Chemistry: Pharmaceutical Chemistry	F207
KC, Asmini	Cell Biology: Cell Biology	G220
Kebede, Yonatan A.	Biochemistry: Biochemistry	G260
Keita, Hamidou	Neuroscience: Neurobiology	E057
Kelley, Alexandria	Microbiology: Bacteriology	A111
Kennedy, Kendall J.	Cancer Biology: Cancer Biology	F234
Kennewick, Kelly	**Cell Biology: Cell Biology**	**O058**
Keyes, Anthony	Cancer Biology: Cancer Biology	C160
Khattab, Reem	Cancer Biology: Cancer Biology	F236
Khusial, Richard D.	Chemistry: Environmental Chemistry	F209
Kibui, Julie	Cell Biology: Cell Biology	A215

Dr. Sidney A. McNairy Jr. Student Symposium 2015 attended by Brittany Martin

Christian R. Gomez

From:	Brittany Martin <martin.brittany94@yahoo.com>
Sent:	Saturday, March 07, 2015 9:45 PM
To:	Freda K. Turpeau
Cc:	Christian R. Gomez
Subject:	Fw: Travel Award - Dr. Sidney A. McNairy, Jr. Student Symposium
Attachments:	Brittany Martin Abstract.docx; Picture.png

On Thursday, March 5, 2015 4:36 PM, "Croft, Cheryl" <ccroft@cau.edu> wrote:
Hello Ms. Freda, I'm applying for the travel award. I have attached my abstract, acceptance letter, and picture.

Thanks,

Brittany Martin

Greetings:
On behalf of the Center for Cancer Research and Therapeutic Development, I am pleased to inform you that you have been selected to receive a travel award and to give an oral student presentation at the Dr. Sidney A. McNairy, Jr. Student Symposium 2015 being held on March 16, 2015. The total presentation should be 20 minutes long – 15 minutes for the actual presentation and 5 minutes for oral discussion. You will also receive a travel award reimbursement of ***up to*** $500 with receipts. Please contact either Ms. Cheryl Croft, ccroft@cau.edu, at (404) 880- 6741 or Ms. Martha Edwards, medwards@cau.edu, at (404) 880- 6755, for further information regarding any forms that you may need to complete beforehand. If for any reason you are unable to commit to giving the oral presentation, please advise us ***no later than*** Monday, March 9, 2019.

I wish you the best of luck and look forward to seeing you at the Dr. Sidney A. McNairy, Jr. Student Symposium.

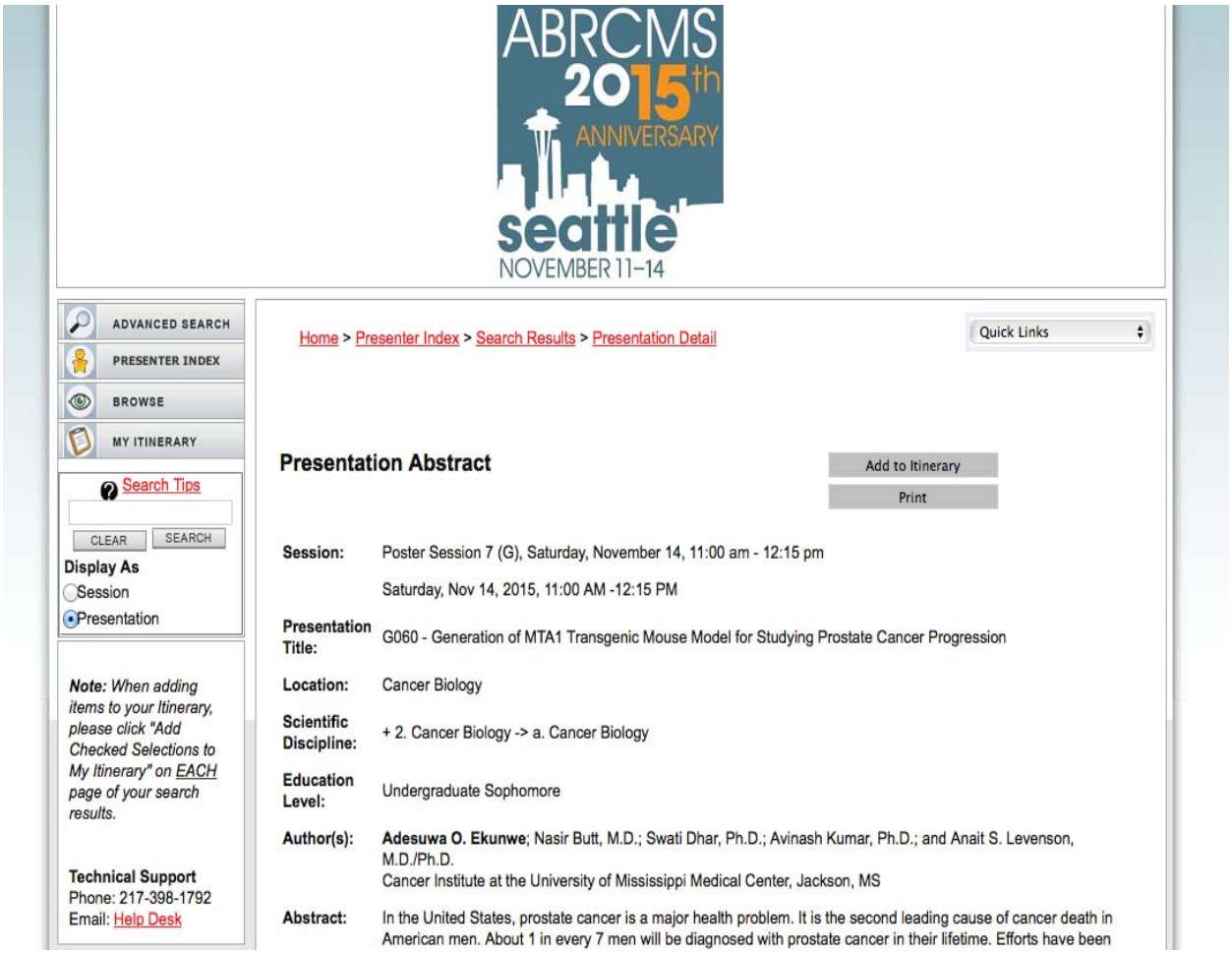
Best regards,

Shafiq A. Khan
Director, CCRTD

Cheryl R. Croft, Project Manager II
Center for Cancer Research and
Therapeutic Development
Clark Atlanta University
223 James P. Brawley Drive, SW
Atlanta, Georgia 30314
404-880-6741 (office)

1

ABRCMS 2015 attended by Adesuwa Ekunwe



ABRCMS 2017 attended by Timera Brown



Dear Timera Brown,

Congratulations! Your abstract, "Immunoglobulin A (IgA) Coated Bacteria in Infant Stool Microbiota Used as a Biomarker for Immune System Development between Old Order Mennonite and Rochester Populations - A Pilot Study", has been accepted for a **POSTER Presentation** at the 2017 Annual Biomedical Research Conference for Minority Students (ABRCMS) on November 1 - 4 at the Phoenix Convention Center in Phoenix, AZ.

To secure your spot and receive your assigned poster presentation number, date and time you must accept this invitation by clicking the "Accept" button below by Wednesday, September 27. If for any reason you cannot attend the conference, please withdraw your abstract immediately by clicking the "Withdraw" button below.

By clicking the "Accept" button below you, the presenter, agree to the following statements: 1) I will register for the conference and pay the appropriate fee; 2) I agree to present my poster presentation during my assigned date/time, which will be provided by mid-October; and 3) I understand that failure to show up at my presentation will result in my ineligibility in all future ABRCMS judging programs.

Conference registration information can be found on the conference website. Discount registration deadline is Tuesday, October 10, 2017. A conference orientation for all students is scheduled for Thursday, November 2 at 8:00 am. Every effort should be made to attend this important orientation.

If you applied to the ABRCMS Travel Award, a separate eNotification will be sent in the coming days. This abstract eNotification does not equate to your acceptance into the Travel Award program.

Again, congratulations on your abstract acceptance. Please indicate your intention (accept or withdraw) by Wednesday, September 27. Contact ABRCMS staff Leah Gibbons at lgibbons@asmusa.org if you have any questions. We look forward to seeing you in Phoenix.

Respectfully,

Avery August, Ph.D.
Chair, Steering Committee
Annual Biomedical Research Conference for Minority Students (ABRCMS)

Accept Withdraw

ABRCMS is managed by the American Society for Microbiology, Education Department, 1752 N Street, NW, Washington, DC 20036 and funded by a grant from the National Institute of General Medical Sciences of the National Institutes of Health (Award # R13GM113579-02).

Abstract 3928: Association of calcium sensing receptor polymorphisms at rs1801725 with circulating calcium in breast cancer patients

July 2017 · Cancer Research 77(13 Supplement):3928-3928
DOI · 10.1158/1538-7445.AM2017-3928

Diva Sarde Whalen
7.54 · Meharry Medical College

Li Wang
Not on ResearchGate

Sarrah Widatalla
Not on ResearchGate

+ 2



Amos Sakwe
30.87 · Meharry Medical College

Show more authors

Abstract

Patients with metastatic or end-stage breast cancer (BC) inevitably develop hypercalcemia, while up to 30% of BC patients develop cancer-induced hypercalcemia (CIH) in the absence of metastases or bone diseases. The commonly diagnosed mild increase in circulating calcium activates the calcium sensing receptor (CaSR) and has been shown to be associated with larger and more aggressive breast tumors in postmenopausal and premenopausal patients respectively. Whether differences in circulating calcium and/or specific inactivating CaSR variants play any role in disparities in BC outcomes remains unclear. DESIGN METHODS: We identified 199 BC cases and 384 age and genetic ancestry-matched controls with calcium assay and genotyping data from the Vanderbilt University DNA biorepository (BioVU) linked to de-identified electronic medical records. The linear mixed effects and codominant models were used to assess the relationship between inactivating CaSR mutations at rs1801725 (codon 986) and rs1801726 (codon 1011) and either circulating calcium levels or risk of high calcium-driven aggressive BC outcomes. RESULTS: We observed that circulating calcium levels were significantly higher in BC cases compared to control subjects (p=0.001) and interestingly, in subjects of African ancestry compared to Caucasians (p=0.001). The A986S mutant CaSR is common among Caucasians while the Q1011E mutant receptor is common among African Americans. However, only inactivating mutations at rs1801725 locus were significantly associated with higher calcium levels (p=0.006) and a higher (69%) risk of high calcium-driven aggressive BC outcomes compared to the wild type receptor. We also demonstrate that invasive BC cells are tolerant to sustained high calcium and that their adaptation to high calcium occurs via up-regulation of calcium-activated early response and malignancy-associated genes. CONCLUSION: These data suggest that inactivating CaSR polymorphisms at rs1801725 predispose BC patients to hypercalcemia and that high circulating calcium-driven aggressive disease outcomes occur via calcium modulated malignancy-associated genes such as MAGEC2/CT10. Citation Format: Diva Whalen, Li Wang, Sarrah Widatalla, Josiah Ochieng, Ann Richmond, Amos Sakwe. Association of calcium sensing receptor polymorphisms at rs1801725 with circulating calcium in breast cancer patients [abstract]. In: Proceedings of the American Association for Cancer Research Annual Meeting 2017; 2017 Apr 1-5; Washington, DC. Philadelphia (PA): AACR; Cancer Res 2017;77(13 Suppl):Abstract nr 3928. doi:10.1158/1538-7445.AM2017-3928

National Organization for the Professional Advancement of Black Chemist and Chemica Engineers (NOBCChE) attended by Ornella Amoah

On Tue, Oct 3, 2017 at 9:43 AM, <answers@nobcche.org> wrote:

Confirmation of Abstract Acceptance

National Organization for the Professional Advancement of Black Chemists and Chemical Engineers

Dear Ornella:

We are pleased to inform you that your abstract entitled **Effect of Polyphenol-Induced Heat Shock Response on the Metabolism of Sphingolipids in C. elegans.** has been scheduled for a poster presentation. Posters can be setup beginning at 8:00 am on Tuesday, October 31. All posters must be setup by 3 pm. **PLEASE NOTE; Posters will be setup at the Radisson and at the Marriott. You will be assigned a specific location. We will send you an email with further details closer in.**

You will have one side of an 8' x 4' board. Pins will be available.

Judging will occur during the NOBCChE ConneXions reception on Tuesday evening from 6:00 PM to 8:00 PM. We encourage you to be with your poster during that time to answer questions.

All presenters must respond to answers@nobcche.org with their acceptance of this presentation date no later than October 6, 2017.

1

Appendix #16 Publication by Diva Whalen (Class 2014)

Wang et al. BMC Cancer (2017) 17:511
DOI 10.1186/s12885-017-3502-3

BMC Cancer

RESEARCH ARTICLE Open Access

Association of calcium sensing receptor polymorphisms at rs1801725 with circulating calcium in breast cancer patients

Li Wang[2], Sarrah E. Widatalla[1], Diva S. Whalen[1], Josiah Ochieng[1] and Amos M. Sakwe[1*]

Abstract

Background: Breast cancer (BC) patients with late-stage and/or rapidly growing tumors are prone to develop high serum calcium levels which have been shown to be associated with larger and aggressive breast tumors in post and premenopausal women respectively. Given the pivotal role of the calcium sensing receptor (CaSR) in calcium homeostasis, we evaluated whether polymorphisms of the CASR gene at rs1801725 and rs1801726 SNPs in exon 7, are associated with circulating calcium levels in African American and Caucasian control subjects and BC cases.

Methods: In this retrospective case-control study, we assessed the mean circulating calcium levels, the distribution of two inactivating CaSR SNPs at rs1801725 and rs1801726 in 199 cases and 384 age-matched controls, and used multivariable regression analysis to determine whether these SNPs are associated with circulating calcium in control subjects and BC cases.

Results: We found that the mean circulating calcium levels in African American subjects were higher than those in Caucasian subjects ($p < 0.001$). As expected, the mean calcium levels were higher in BC cases compared to control subjects ($p < 0.001$), but the calcium levels in BC patients were independent of race. We also show that in BC cases and control subjects, the major alleles at rs1801725 (G/T, A986S) and at rs1801726 (C/G, Q1011E) were common among Caucasians and African Americans respectively. Compared to the wild type alleles, polymorphisms at the rs1801725 SNP were associated with higher calcium levels ($p = 0.006$) while those at rs1801726 were not. Using multivariable linear mixed-effects models and adjusting for age and race, we show that circulating calcium levels in BC cases were associated with tumor grade ($p = 0.009$), clinical stage ($p = 0.003$) and more importantly, with inactivating mutations of the CASR at the rs1801725 SNP ($p = 0.038$).

Conclusions: These data suggest that decreased sensitivity of the CaSR to calcium due to inactivating polymorphisms at rs1801725, may predispose up to 20% of BC cases to high circulating calcium-associated larger and/or aggressive breast tumors.

Keywords: Calcium-sensing receptor, Single nucleotide polymorphism, Cancer-induced hypercalcemia, Breast cancer, Genome-wide association studies

* Correspondence: asakwe@mmc.edu
[1]Department of Biochemistry and Cancer Biology, School of Graduate Studies and Research, Meharry Medical College, Nashville, TN 37208, USA
Full list of author information is available at the end of the article

BioMed Central

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Appendix #17: Prostate Cancer Knowledge Assessment

Prostate Cancer Knowledge Assessment

July 20, 2015

YOUR NAME (Please print legibly):_____

MULTIPLE CHOICE SECTION (Circle the BEST answer).

1) The majority of men in the U.S.A. diagnosed with prostate cancer in the current era have

A) a small chance of being cured with current therapies.

B) cancers that are found incidentally on imaging studies done for another reason.

C) few to no symptoms to suggest the presence of cancer.

D) severe symptoms that lead to the diagnosis of prostate cancer.

E) None of the above are correct.

2) Which prostate cell type(s) are most likely to be the cells from which prostate cancers originate?

A) Basal cells only

B) Luminal cells only

C) Neuroendocrine cells

D) Both basal and luminal cells

F) Both basal and neuroendocrine cells

3) Which of the following is ***NOT*** one of the seven standard medical therapies for treating prostate cancer?

A) Hormone therapy

B) Magnetic therapy

C) Radiation therapy

D) Surgery

E) Watchful waiting or active surveillance

4) Which of the following drugs used to treat prostate cancer results in a reduced production of testosterone as a consequence of its primary mechanism of action?

A) Cabazitaxel

B) Denosumab

C) Goserelin

D) Sipleucel T

E) Zoledronic acid

TRUE/FALSE SECTION: Circle TRUE or FALSE for each of the following statements.

5) Processed sugar in the American diet is the primary cause of rising prostate cancer rates. (TRUE or FALSE)

6) If he lives long enough, almost every male will develop prostate cancer. (TRUE or FALSE)

7) Human papilloma virus (HPV) causes cervical cancer in females and prostate cancer in males. (TRUE or FALSE)

SHORT ANSWER SECTION: Write the MOST CORRECT short answer in the space provided.

8) Name at least 4 risk factors for prostate cancer:

_____

_____

9) List at least one of the functions of the prostate gland

_____

_____

10) Name a prostate cancer biomarker approved by the U.S. Food and Drug Administration.

_____

_____

Question	Correct Answer	Student 1 6-1-2015	Student 1 7-20-2015	Student 2 6-1-2015	Student 2 7-20-2015	Student 3 6-1-2015	Student 3 7-20-2015	Student 4 6-1-2015	Student 4 7-20-2015	Student 5 6-1-2015	Student 5 7-20-2015	Student 6 6-1-2015	Student 6 7-20-2015	Average pre-course	Average post-course
1	C	1	1	1	1	1	1	1	1	1	1	1	1		
2	D	0	1	0	1	0	0	0	1	0	1	0	1		
3	B	1	1	0	1	1	1	1	1	1	1	0	1		
4	C	0	0	0	0	0	0	0	0	1	0	0	0		
5	FALSE	1	1	0	1	0	1	0	1	1	1	1	1		
6	TRUE	0	1	0	1	1	1	0	1	1	1	0	1		
7	FALSE	1	1	0	0	0	1	0	1	1	1	0	1		
8	Age, Family History, Race, Diet	0.75	0.75	1	0.75	0.5	1	0.5	0.75	0.5	0.75	0.5	0.75		
9	(Acceptable answers: to produce seminal fluid; to produce the substances in semen which maintain healthy sperm. Incorrect answer: to produce sperm)	0	0	1	1	0	1	1	1	1	1	0	1		
10	(Acceptable answers: PSA; Prostate Serum Antigen; Best answer: Prostate Health Index (phi) which combines total PSA, free PSA and [-2]proPSA into a single score.)	0	1	0	1	0	1	0	1	0	1	0	1		
	Final Score	47.50%	77.50%	30.00%	77.50%	35.00%	80.00%	35.00%	87.50%	75.00%	87.50%	25.00%	87.50%	**41.25%**	**82.92%**
	Improvement		**163%**		**258%**		**229%**		**250%**		**117%**		**350%**		**201%**

Prostate Cancer Knowledge Assessment

July 25, 2016

YOUR NAME (Please print legibly):_____

MULTIPLE CHOICE SECTION (Circle the BEST answer).

1) The majority of men in the U.S.A. diagnosed with prostate cancer in the current era have

A) a small chance of being cured with current therapies.

B) cancers that are found incidentally on imaging studies done for another reason.

C) few to no symptoms to suggest the presence of cancer.

D) severe symptoms that lead to the diagnosis of prostate cancer.

E) None of the above are correct.

2) Which prostate cell type(s) are most likely to be the cells from which prostate cancers originate?

A) Basal cells only

B) Luminal cells only

C) Neuroendocrine cells

D) Both basal and luminal cells

F) Both basal and neuroendocrine cells

3) Which of the following is ***NOT*** one of the seven standard medical therapies for treating prostate cancer?

A) Hormone therapy

B) Magnetic therapy

C) Radiation therapy

D) Surgery

E) Watchful waiting or active surveillance

4) Which of the following drugs used to treat prostate cancer results in a reduced production of testosterone as a consequence of its primary mechanism of action?

A) Cabazitaxel

B) Denosumab

C) Goserelin

D) Sipuleucel T

E) Zoledronic acid

TRUE/FALSE SECTION: Circle TRUE or FALSE for each of the following statements.

5) Processed sugar in the American diet is the primary cause of rising prostate cancer rates. (TRUE or FALSE)

6) If he lives long enough, almost every male will develop prostate cancer. (TRUE or FALSE)

7) Human papilloma virus (HPV) causes cervical cancer in females and prostate cancer in males. (TRUE or FALSE)

SHORT ANSWER SECTION: Write the MOST CORRECT short answer in the space provided.

8) Name at least 4 risk factors for prostate cancer:

_____

_____

9) List at least one of the functions of the prostate gland

_____

_____

10) Name a prostate cancer biomarker approved by the U.S. Food and Drug Administration.

_____

_____

Question	Correct Answer	Student 1 6-6-2016	Student 1 7-25-2016	Student 2 6-6-2016	Student 2 7-25-2016	Student 3 6-6-2016	Student 3 7-25-2016	Student 4 6-6-2016	Student 4 7-25-2016	Student 5 6-6-2016	Average pre-course	Average post-course
1	C	0	1	0	0	0	0	1	1	1		
2	D	0	0	1	0	0	1	0	1	0		
3	B	0	1	0	1	0	1	0	1	1		
4	C	1	1	0	0	0	0	0	0	0		
5	FALSE	1	1	1	1	0	1	1	1	1		
6	TRUE	1	1	0	1	0	1	1	1	0		
7	FALSE	1	1	1	1	0	0	0	0	1		
8	Age, Family History, Race, Diet	0.5	1	0.5	1	0	1	0.25	1	0		
9	(Acceptable answers: to produce seminal fluid; to produce the substances in semen which maintain healthy sperm. Incorrect answer: to produce sperm)	0	1	0	1	0	0	0	0	0		
10	(Acceptable answers: PSA; Prostate Serum Antigen; Best answer: Prostate Health Index (phi) which combines total PSA, free PSA and [-2]proPSA into a single score.)	0	1	0	1	0	0	0	0	0		
	Final Score	45.00%	90.00%	35.00%	70.00%	0.00%	50.00%	32.50%	60.00%	40.00%	**30.50%**	**67.50%**
	Improvement		**200%**		**200%**		**#DIV/0!**		**185%**			**221%**

Appendix #18: Biographies

Class of 2014

Ansley Scott
ansleyscott@yahoo.com



Current status: She graduated with honors from Tougaloo College in May of 2014, earning a Bachelor of Science in Biology. She was accepted to the Medical School at the University of Arkansas for Medical Sciences and plans to obtain her Medical degree in 2020.
Mentor: Yin Yuan Mo, Ph.D.
Project Title: Creating long non-coding RNA Knockouts to Determine Function in Relation to Prostate Cancer.

Anthony C. Keyes
antkey200@yahoo.com



Current status: He successfully completed his undergraduated program at Jackson State University, participating in different training programs, along with international experience. Anthony was accepted into several Ph.D. programs in Chemistry around the country, including California Institute of Technology, MIT, UC Berkeley, University of Houston and Vanderbilt. He finnaly decided to join the Ph.D. Program in University of Houston.
Mentor: Drazen Raucher, Ph.D.
Project Title: Thermal Manipulation of the Elastin-Like Polypeptide P21-E1-Bac Increases the Therapeutic Peptide's Potency Compared to the Parent Compound in vivo.

Brittany Nicole Martin

Martin.Brittany94@yahoo.com



Current status: Graduated at Jackson State University. Currently, she pursing a Masters Degree in Biomedical and Health Sciences. She is planing to start Optometry School in August 2018.
Mentor: Christian Gomez, Ph.D.
Project title: The Role of Hepatoma Up-Regulated Protein (HURP) in resistance to prostate cancer treatment.

Diva Whalen

dwhaln@live.com



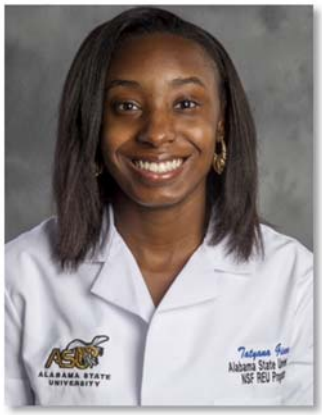
Current status: She completed her academic journey at Tougaloo College and earned a bachelor of science in biology. She graduated with honors and academic honors society. She was the Student Government President, involved in several organizations such as Beta Beta Beta, Sigma Xi, Alpha Lambda Delta, NAACP. She is currently at third year of PhD program at Meharry Medical College Biochemistry and Cancer Biology Department.
Mentor: Anait Levenson, M.D., Ph.D.
Project Title: The Effects of Synthetic Stilbenes on Metastasis Associated Protein 1 (MTA1) Levels In Prostate Cancer Cells.

Joshua Earl Agee
jagee227@yahoo.com



Current status: Joshua received his Bachelor of Science in Biology May 3, 2015 from Tougaloo College. He is currently working ath the Open Arms Healthcare Center University of Mississippi Medical Center as a research coordinator. He was accepted to the School of Graduate Studies in the health Sciences at University of Mississippi Medical Center for the Fall of 2017.
Mentor: Xinchun Zhou, Ph.D.
Project Title: C-terminal of group 3 POTEs correlates with the progression of Prostate Cancer.

Tatyana Givens
tatyana.g@live.com



Current Status: She received her Bachelor of Science at Jackson State University. She is currently in the second year at the Mercer University College of Pharmacy and working at Kroger as a Pharmacy Intern.
Mentor: Chindo Hicks, Ph.D.
Project Title: Molecular Studies of miRNa and mRNA Signatures in Prostate Cancer in African American and Caucasian Men.

Class of 2015

Adesuwa Ekunwe
daisies8@gmail.com



Current Status: She is a Senior at Jackson State University. She is seeking to obtain a bachelor's of science in chemistry. She is currently applying to post-bachelor pre-medical programs. Her future plans is to apply to medical school and obtain an MD/Ph.D.
Mentor: Anait Levenson, M.D., Ph.D.
Project Title: Prostate-Specific MTA1 Transgenic Mice Model.

Angel G. Garcia
gabrielangel1994@yahoo.com



Current status: He successfully completed his undergraduate program and obtained his Bachelor of Science at Tougaloo College. He is currently working at the University of Tennessee Health Science Center as a researcher.
Mentor: Christian Gomez, Ph.D.
Project Title: The Effect of Environmental Stress Conditions on MICA Concentrations.

Charles Phillips
Jzg.cphillips@gmail.com



Current status: He finished his undergraduate program obtaining the Bachelor of Science degree in Biology at Tougaloo College. He was accepted at the School of Graduate Studies in Health Science, Department of Pathology, and he is currently at his second year.
Mentor: Yin-Yuan Mo, Ph.D.
Project Title: Long non-coding RNAs as potential diagnostic/prognostic markers in prostate cancers.

Deion Fields
fieldsdeion@gmail.com



Current Status: He is a senior at Jackson State University, majoring in Biology. His future plan is to apply for Pharmacy School.
Mentor: Keli Xu, Ph.D.
Project Title: Effects of Notch3 in Aggressiveness of Prostate Cancer.

Jamal J. Keyes
jamal.keyes01@gmail.com



Current status: Jamal Keyes is a senior at Jackson State University originally from Colorado Springs, CO. He is continuing on his path to earn a Bachelor of Science in Chemistry degree. He is planning to travel to Japan to serve as an assistant language teacher and cultural ambassador.
Mentor: Drazen Raucher, Ph.D.
Project Title: Utilizing Thermally Responsive Elastin-like Polypeptides to Treat Prostate Cancer.

Timera Brown.
tl.brown@bellsouth.net



Current Status: Timera Brown is a senior at Tougaloo College where she majors in biology. She is the Chapter President of Zeta Phi Beta Sorority, Incorporated, Nu Beta Chapter. She received an early acceptance to the Warren Alpert School of Medicine of Brown University.
Mentor: Xinchun Zhou, M.D., Ph.D.
Project Title: The Association of Cholesteryl Ester (CE) with the Pathogenesis and Racial Disparity of Prostate Cancer.

Class of 2016

Courtney Mangum
courtmangum@gmail.com



Current status: Courtney Mangum, from Jackson, Mississippi, obtained her Bachelor of Science in Biology at Tougaloo College. She was accepted at University at Buffalo Jacobs School of Medicine and Biomedical Sciences for Medical School.
Mentor: Dr. Keli Xu
Project title: Identifying Progression of Aggressive Prostate Cancer Originating from Lunatic Fringe/Notch-Regulated Mice Models

Ornella Amoah
ornellaamaoh@gmail.com



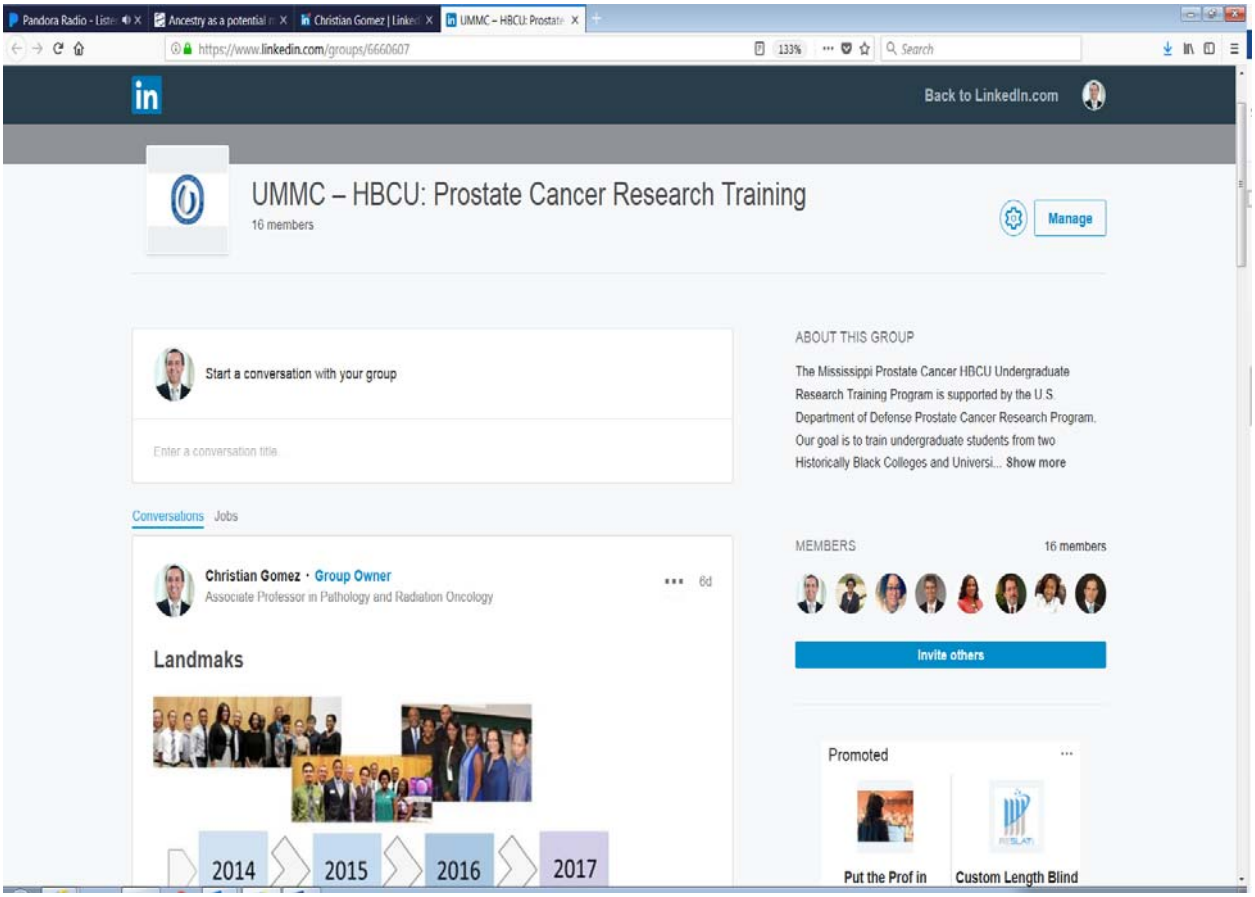
Current status: Ornella Amoah obtained her Bachelo of Science in Chemistry at the Jackson State University. This summer she was able to study hypoxia in relation to prostate cancer with proteins HURP and HIF-1alpha. Ornella is currently applying to Graduate Schools to pursue a PhD in Chemistry.
Mentor: Dr. Christian R. Gomez
Project title: Effects of Hypoxia on the Aggressiveness of PCa

Appendix #19: Social media resources

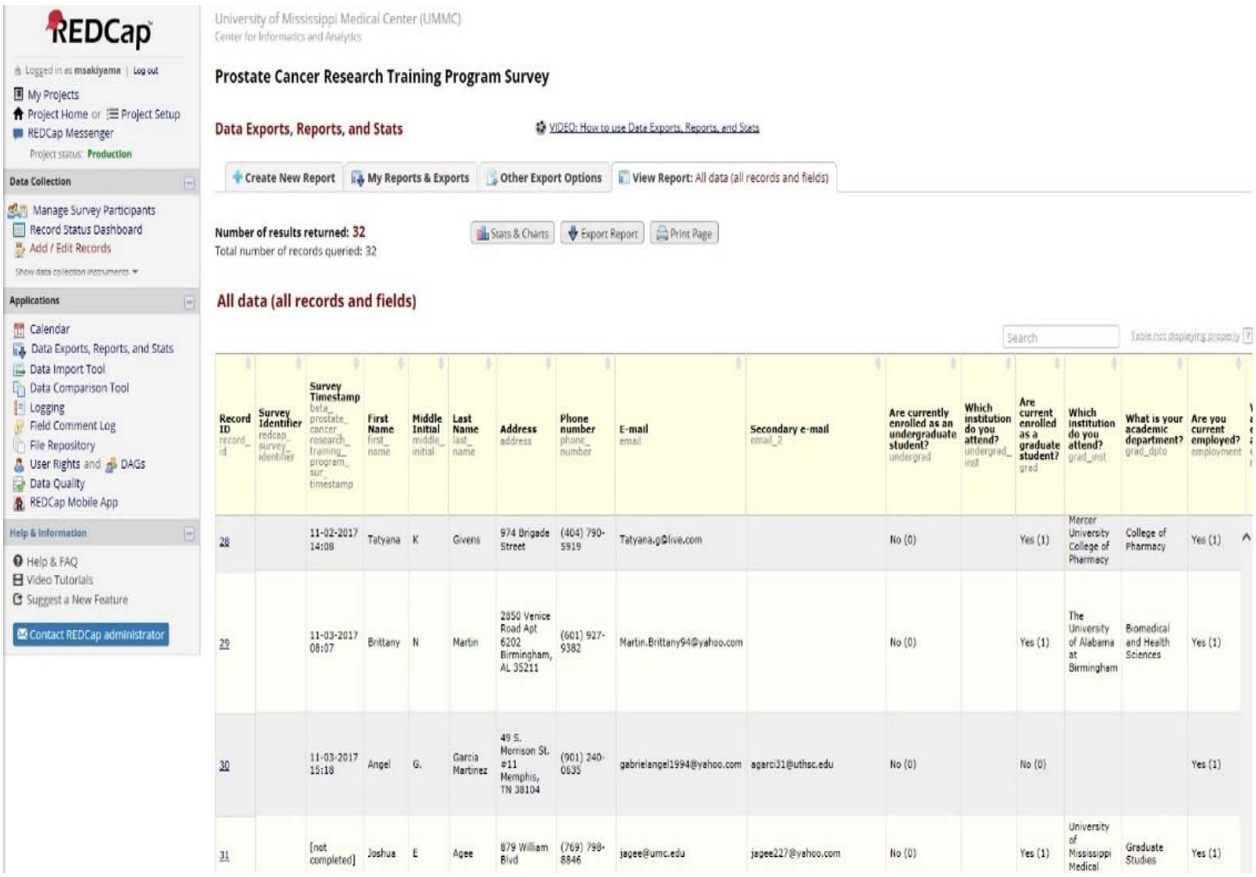
Facebook group screenshot



LinkedIN group screenshot



Appendix #20: RedCap portal for student follow up



REDCap

Logged in as msakiyama | Log out

My Projects
Project Home or Project Setup
REDCap Messenger
Project status: Production

Data Collection
Manage Survey Participants
Record Status Dashboard
Add / Edit Records
Show data collection instruments

Applications
Calendar
Data Exports, Reports, and Stats
Data Import Tool
Data Comparison Tool
Logging
Field Comment Log
File Repository
User Rights and DAGs
Data Quality
REDCap Mobile App

Help & Information
Help & FAQ
Video Tutorials
Suggest a New Feature
Contact REDCap administrator

University of Mississippi Medical Center (UMMC)
Center for Informatics and Analytics

Prostate Cancer Research Training Program Survey

Data Exports, Reports, and Stats

VIDEO: How to use Data Exports, Reports, and Stats

Create New Report | My Reports & Exports | Other Export Options | View Report: All data (all records and fields)

Number of results returned: 32
Total number of records queried: 32

Stats & Charts | Export Report | Print Page

All data (all records and fields)

Search | Table not displaying properly

Record ID (record_id)	Survey Identifier (redcap_survey_identifier)	Survey Timestamp (beta_prostate_cancer_research_training_program_sur_timestamp)	First Name (first_name)	Middle Initial (middle_initial)	Last Name (last_name)	Address (address)	Phone number (phone_number)	E-mail (email)	Secondary e-mail (email_2)	Are currently enrolled as an undergraduate student? (undergrad)	Which institution do you attend? (undergrad_inst)	Are current enrolled as a graduate student? (grad)	Which institution do you attend? (grad_inst)	What is your academic department? (grad_dpto)	Are you current employed? (employment)
28		11-02-2017 14:08	Tatyana	K	Givens	974 Brigade Street	(404) 790-5919	Tatyana.g@live.com		No (0)		Yes (1)	Mercer University College of Pharmacy	College of Pharmacy	Yes (1)
29		11-03-2017 08:07	Brittany	N	Martin	2850 Venice Road Apt 6202 Birmingham, AL 35211	(601) 927-9382	Martin.Brittany94@yahoo.com		No (0)		Yes (1)	The University of Alabama at Birmingham	Biomedical and Health Sciences	Yes (1)
30		11-03-2017 15:18	Angel	G.	Garcia Martinez	49 S. Morrison St. #11 Memphis, TN 38104	(901) 240-0635	gabrielangel1994@yahoo.com	agarci31@uthsc.edu	No (0)		No (0)			Yes (1)
31		[not completed]	Joshua	E	Agee	879 William Blvd	(769) 798-8846	jagee@umc.edu	jagee227@yahoo.com	No (0)		Yes (1)	University of Mississippi Medical	Graduate Studies	Yes (1)