



FAYETTEVILLE
STATE UNIVERSITY

Volume 9
Fall 2017- Spring /Summer 2018

FSU RISE News



FSU-RISE Program

The Fayetteville State University Research Initiative for Scientific Enhancement (FSU-RISE) program is sponsored by the National Institutes of Health/ National Institute of General Medical Sciences (NIH/ NIGMS). The overarching goal of the program is to increase the number of well-prepared FSU minority students pursuing terminal degrees in biomedical and behavioral fields of study. FSU-RISE offers opportunities for faculty, staff and students to engage in professional development and creative scientific research. Students matriculate in FSU-RISE from their sophomore year through graduation. Developmental activities include seminars, hands-on biotechniques/bioinformatics workshop, intramural and extramural research, career trips, Graduate Record Exam (GRE) preparation, and an undergraduate research symposium. FSU-RISE also sponsors a four-week Pre-Freshman Summer Enrichment Program (PFSEP) to prepare Pre-RISE Scholars for college-level biology, chemistry and math courses, and to stimulate their interests in pursuing research careers. FSU-RISE and PFSEP scholars make presentations at local and/or national symposia.

"The Mission of the FSU-RISE program is to provide high quality research training and professional development for competitive entry into graduate programs and careers in biomedical science field."

FSU-RISE Scholar Dissertation Defense



Ph.inished!

Dr. Yvonne Victoria Rosario

Dr. Yvonne Victoria Rosario is a Fayetteville State University (FSU) May 2007 graduate with a Bachelor's of Science degree in Biology and a minor in Chemistry. Dr. Rosario earned her Doctor of Philosophy (Ph.D.) in Biomedical Sciences at Morehouse School of Medicine in April, 2018 under the mentorship of Dr. Beatrice Gee. Her dissertation entitled "Characterization of

Novel Endothelial Genes: FAM124B is a Pro-Apoptotic Gene" based on apoptosis, bioinformatics, cardiovascular research, endothelial dysfunction, and epigenetics. The central hypothesis was focused on the concept of genes preferentially demethylated and therefore expressed in the endothelium may play a major role in its function. Their findings are novel and consistent with published data in other cell systems. As a graduate student, Dr. Rosario have one publication in pre-submission, presented the results of her research at twelve (12) local and national conferences, and received fellowships and awards. After graduating from FSU, she became a science and math licensed teacher for two years where she taught and mentored students from grades sixth through twelfth. Afterwards, she was accepted into the masters program at Morehouse from July, 2009 - May, 2011 under the mentorship of Dr. Methode Bacanamwo. In August, 2011, she transferred into the graduate program and became a teaching assistant where she assisted other graduate students in learning techniques for organ harvesting, immunohistochemistry and microscopy in an Organ & Systems Lab course. She also was an active member in professional memberships such as Beta Kappa Chi Honor Society and the Society for Advancing Chicano/Hispanic & Native Americans in Science. Dr. Rosario received a post-doctoral fellowship at the National Institute of Health (NIH) starting in August, 2018.



Inside this issue:

Ph.D. Recipient	1
RISE Scholar Graduates	
Former RISE Graduates/	2-3
Success Pathways	
Leadership Retreat/	
Professional Roundup	4
ABRCMS 2017	5
RISE Scholar on CBS	6-
News for extramural	10
RISE Family Cookout	11
E.E. Just Symposium	12
visit at MUSC	
Farwell to Ms. Baldwin	13
Accomplishments of Former	
Scholars / New Coordinator	14
FSU STEM Symposium/	15-
New Publication	16
BSSC	
LEAP-RISE /	17
RISE MENTORS	
RISE Office	18

You did it!
 Congratulations



FSU-RISE Graduates

On their way to a Ph.D.



Marissa Baccas



Brandon Murphy



Kenya McFadyen



Truman Thames

The pathway to graduate school is revealed in the treading

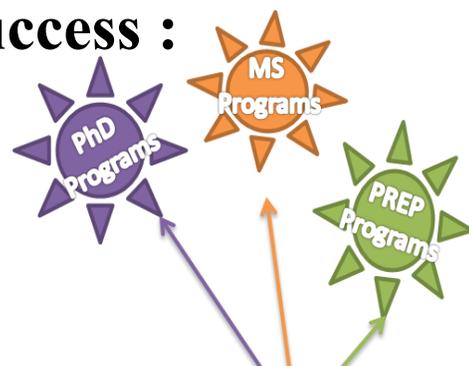
A major objective of the FSU-RISE program is to prepare scholars for graduate studies. The following individuals were accepted into programs across the country. **Marissa Baccas**, a spring 2018 graduate, was accepted for admission to the Ph.D. program in Biochemistry, Molecular & Cell Biology (BMCB) at Cornell University. **Brandon Murphy**, a fall 2017 graduate, was accepted for admission to the PhD program in Biomedical Sciences at the University of Florida, College of Medicine. **Truman Thames**, a spring 2018 graduate, was accepted for admission to the PhD program at University of Missouri Graduate Math Program. **Kenya McFadyen** a spring 2018 graduate, was accepted into the Medical University of South Carolina (MUSC) Postbaccalaureate Research Education Program (PREP).



Former FSU-RISE Scholars: Where are they now?

The former RISE scholars are either at the beginning or just completed their programs at professional schools across the country. During this 2017-2018 academic year, we received news from the former scholars about their acceptances. **Bridget Venegas** was accepted to the Burrell College of Osteopathic Medicine. **Leea' Richardson** completed the Neuroscience Masters program at Wake Forest University; **Davesha Worrell** completed the Clinical Lab Sciences Masters program at Augusta University; and **Dr. Lea Lough** completed the Ph.D. program in the division of Biology at Sackler Institute of Graduate Biomedical Sciences in New York. **Robin Brice** completed the Biology Masters program at Elizabeth City State University and was admitted to the Ph.D. Biology program at Clark Atlanta University. **Dr. Harmin Herrera** completed the Ph.D. program in Biomedical Sciences at Medical University of South Carolina (MUSC) and **Dr. Yvonne Victoria Rosario** completed the Ph.D. program in Biomedical Sciences at Morehouse School of Medicine.

FSU-RISE Program Ladder to Success :



ACADEMIC YEAR

SUMMER		EXTRAMURAL SUMMER RESEARCH EXPERIENCE		
		NC-LSAMP McNAIR other programs	INTRAMURAL RESEARCH EXPERIENCE & CRITICAL THINKING/TEST-TAKING STRATEGIES WORKSHOP	
FALL			BIOTECHNIQUE WORKSHOPS	INTRAMURAL RESEARCH EXPERIENCE & CRITICAL THINKING/TEST-TAKING STRATEGIES WORKSHOP
		RESEARCH SEMINARS & SCIENTIFIC MEETINGS		
		ENRICHMENT SEMINARS: Applications & Professional Development, Conference Presentations, Recruitment and Leadership Development		
SUMMER	LEAP/RISE (4-week) BIO, CHEM, MATH and English Enrichment Program	FSU-RISE PROGRAM		
		Pre-Freshman	Freshman	Sophomore

Leadership Retreat at Myrtle Beach, SC



Every fall semester, RISE Scholars and Staff travels down to the Myrtle Beach to regroup and build on a two-day Leadership Retreat. Activities on team building and leadership was performed as well as making suggestions to make this program stronger.

Dr. Valeria Fleming Professional Roundup

The Dr. Valeria Fleming Professional Round-Up was originally organized in 2009 as part of a campus-wide celebration for Dr. Valeria Fleming, Professor of Biology/Biotechnology, in honor of her dedication to more than 50 years of service to Fayetteville State University (FSU) and the State of North Carolina. Since then the event has been held annually and semi-annually for the past three years. The professional round-up showcases FSU Alumni who are now completing post-undergraduate education or currently working in science-related professional fields (medicine, dentistry, pharmacy, research, etc.). The goal of the event is to inspire FSU students to complete their undergraduate degrees and to pursue advanced degrees in their fields of study. The event affords current FSU students an opportunity to hear about and to discuss the experiences of our alumni while at FSU, to learn about various professional careers, and to establish a Bronco Network with FSU alumnus.



Dr. Valeria Fleming Scholarship 2017-18 Recipients

- Kaila Craig
- Kerry Hall
- Jonathon Hobbs
- Myah Howard
- Zyaja Mattocks
- Quaveon McCallum

Fall 2017 Annual Biomedical Research conference for Minority Students

The Annual Biomedical Research Conference for Minority Students (ABRCMS) has become the premier venue for students in the biomedical or behavioral sciences, including mathematics, to network with and learn from the best pioneers, thinkers and practitioners in the sciences. Fourteen (14) Fayetteville State University Research Initiative for Scientific Enhancement (FSU-RISE) scholars and one (1) LSAMP scholar attended the conference in Phoenix, Arizona on November 1-4, 2017. Nine (9) of these students presented their intramural and extramural research projects in the conference poster presentation competition: including Brandon Murphy, Kenya McFadyen, Arshay Grant, Samuel Cooper, Ky'ara Carr, Marissa Baccas, Zaniya Mark, Chastity Ward, and Lorenna Garcia-Bochas. Now in its eighteenth year, ABRCMS is one of the largest, professional conferences for underrepresented minority students, military veterans, and persons with disabilities to pursue advanced training in science, technology, engineering and mathematics (STEM). Although, we did not have a winner this year, we feel like this upcoming ABRCMS is the year for most of our scholars to shine. ABRCMS attracts approximately 4,050 individuals, including 2,100 undergraduate and postbaccalaureate students, 450 graduate students and postdoctoral scientists and 1,500 faculty, program directors and administrators. Students come from over 350 U.S. colleges and universities. All are pursuing advanced training in science, technology, engineering and mathematics (STEM), and many have conducted independent research. The conference is designed to encourage underrepresented minority students to pursue advanced training in STEM and provide faculty mentors and advisors with resources for facilitating students' success. More than 650 representatives from graduate programs at US colleges and universities as well as scientists from government agencies, foundations, and professional scientific societies join ABRCMS in the exhibitors program to share information about graduate school and summer internship opportunities. These representatives present research opportunities, funding sources, and professional networks.

UPCOMING: ABRCMS 2018
Indianapolis, Indiana November 14-17



RISE Scholars takes advantage of extramural research experiences to increase their entry into graduate research-intensive institutions.

Each summer FSU-RISE Scholars are required to complete at least five (5) applications to summer research internship at research-intensive institutions across the USA. This requirement was implemented to address the low number of FSU faculty with active research labs and grants. Scholars participate in paid research experiences ranging from \$3-\$5K for an 8-10 week training experience. The training experience includes a real-world, hands-on laboratory experience, enrichment seminars, Graduate Record Exam (GRE) practice, personal statement and research abstract preparation, as well as participation in poster presentations. Upon scholars' return to FSU for the fall semester, they are required to share their summer experiences with the newly accepted scholars to the RISE program as well as with local, regional, and national research conferences. The experiences speak for themselves as our scholars are accepted into research-intensive graduate schools upon FSU graduation. Ten (10) RISE Scholars were accepted into competitive summer research internships while three (3) scholars were accepted into PhD Program and one (1) scholar were accepted into PREP Program for the fall 2018. The thirteen undergraduate research interns include: **Brittany Anderson, Carlin Ashford, Rashad Baker, Loreнна Garcia-Bochas, Daria Brown, LeslieAnn Charles, Don Eaford, Arshay Grant, Cheyenne Holloman, Zaniya Mark, Jeffrey Shipman, Shamar Wallace, Chastity Ward, and Lauryn Worley.** The three graduates includes **Marissa Baccas, Brandon Murphy, Truman Thames,** and one PREP candidate include **Kenya McFadyen.**



Over the summer I had the opportunity to participate in the Emergent Behaviors of Integrated Cellular Systems (EBICS) program at the Georgia Institute of Technology. My experience at GA Tech was amazing and helped shape my career goals. I conducted research in Dr. Yuhong Fan's lab, where there is an emphasis on histone modifications. The purpose of my research was to detect co-regulation between histones and mechanisms that ultimately lead to gene silencing, in Hox genes. I quantified the co-regulation using solely bioinformatics. Although my research was outside of my interest I learned the true importance of bioinformatics in research. Gaining experience in a new research field has also made me a well-rounded researcher and has helped me develop better critical thinking skills. Working in Dr. Fan's lab and learning new computational techniques has gifted me a chance to be more competitive for graduate school admissions. I plan apply my computational skills to microbiology research when I enter graduate school.

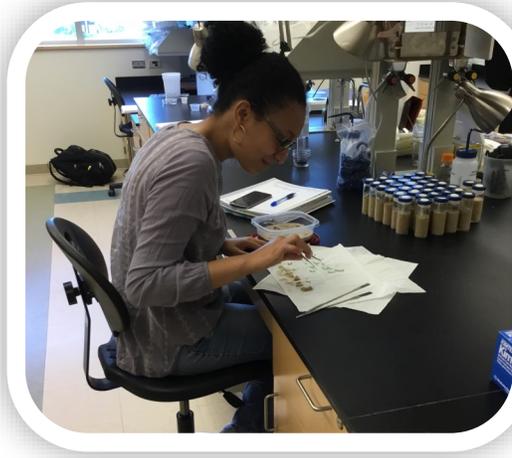
Arshay Grant

I, **Chastity Ward** participated in extramural research at the University of Georgia Population Biology of Infectious Diseases REU Program with Dr. Sonia Altizer and Dr. Richard Hall in the Infectious Diseases Department. My research project was entitled "Behavioral and Environmental Determinants of Parasite Transmission in a Butterfly Host." Although it had an indirect biomedical approach, this project was so interesting because the bigger picture was much more important and effective. I was able to do some bio-computational work R using programming software in "R studio". Studying environmental transmission of parasite infections in Monarch butterflies lead to the discovery on how environmental transmission rates of parasites that infect humans can affect the body. Although I have a strong background in research involving insects, the most challenging part of my experience was the field work because it involved me being in hot weather with a lot of the insects I do not like. During this experience I had the opportunity to see some cool reptiles. This experience had not only increased my motivation to get my PhD in biomedical research, but now has added to my interest of infectious diseases transmitted environmentally in human hosts and how different conditions can increase or decrease transmission.



I, **Leslie Charles**, had the pleasure of participating in an extramural research program at Harvard University: Division of Medical Sciences, in Boston, Massachusetts. My research is titled, "Regulation of Lysis Genes in *Pseudomonas aeruginosa* by RNA Polymerase-Binding Antiterminators". The focus of this project is to characterize virulence factors, like the α P gene in *P. aeruginosa* that play an important pathological role in the colonization and survival of the bacteria within a host, specifically in patients with the inherited gene disorder, cystic fibrosis. My project falls under the Immunology umbrella, however, a lot of the necessary techniques stemmed from Molecular Biology. As someone who works in a Reproductive Biochemistry lab, this was a huge transition for me. But with each day, I was excited to learn something new. Some of the highlights of my summer experience was that I was at one of the most prestigious institutions in America. Coming from an HBCU, I was nervous but eager to show people what this burgeoning physician scientist is capable of. My experience was filled with hard work and challenges, but it was very rewarding in the end. My lab members catered to me in every aspect of the lab and made sure to create a very safe and productive learning environment. My passion for research was revitalized this summer, and for that I am forever grateful.

RISE Scholars takes advantage of extramural research experiences, cont'd.



For this summer, I am working at Fayetteville State University with my mentor Dr. Shirley Chao on her patent-pending pesticide called "Cannamix" which is plant-derived from the Hemp of the Cannabis plant. My project focuses on determining the effects of this pesticide on the development of *Manduca sexta* (Tobacco Hornworm) which is a common greenhouse pest that devours tomato plants and other common agricultural goods. I am using the pesticide in two ways: the liquid concentration which is being dropped on the dorsal thorax in increasing concentrations and the powder formulation which is being mixed into the feed in increasing concentrations. I hope to see the effects of the pesticide like deformations and sped up growth as seen in the other common pests like the Darkling Beetles and the Indian Meal Moth. So far, I am excited and I cannot wait to show my work at ABRCMS 2018 in Indiana!

Lorenna Garcia-Bochas

My research experience at Harvard Medical School (HMS) was absolutely amazing! Giving the privilege of being able to conduct research at this institution with its prestigious caliber is minimal an honor. The research that I have conducted at HMS was focused on the "Linking Phosphorylation of the Synaptonemal Complex Protein With Accurate Chromosome Segregation During Meiosis". The protein *syp-4* is one of the few proteins that support the formation of the synaptonemal complex and we want to understand how the non-phosphorylation of this protein effects meiosis. The hard work and effort that I have invested into my summer research, has unveil to me , the many opportunities that comes along with an higher level of education of graduate school. Doing research at Harvard has also instill in me, "it doesn't matter where/how you start, it's how you finish.

Don Eaford, Jr.



Greetings, I am **Zaniya Mark** and this summer I was given the opportunity to participate in the STAR program at Augusta University: The Graduate School. I conducted research at Georgia Cancer Center under the mentorship of Dr. Kebin Liu. My research project was entitled, "IL-6 Promotes Colon Tumorigenesis Through DNMT-1 and DNMT3b Up-regulation in a STAT3 Dependent Mechanism ". In this project I studied the underlying mechanism of chronic inflammation in an experimental mouse model to determine how and why it is a major cause of colon cancer. One of the highlights of my summer research experience was extracting the inflamed induced colon and Bone Marrow from mice to test my hypothesis. During this study I learned rigorous techniques such as Western Blotting Analysis, Flow Cytometry and 3D Tumor Spheroid Assay, which gave me a better understanding of the overall concept of my project. Although I faced numerous challenges, I was able to complete my 9 weeks project with successful results. Through adversity, hard-work and determination I was blessed with the opportunity to receive an award. The "Ebad Hasan Memorial Award" in remembrance of a Star Alumni. This monetary award is recognized to a STAR participant who enriches the program with his/her presence, involvement, and commitment to STAR, while always finding time to touch the lives of others with friendship, patience and respect. Overall this experience allowed me to grow not only as a scientist but person through my character and knowledge. I am fortunate to work in my field of discipline and pursue my dreams. I am forever grateful for this opportunity and to those who guided me along the way. My research experience has prepared me to be a very competitive applicant for graduate school.

RISE Scholars takes advantage of extramural research experiences, cont'd.

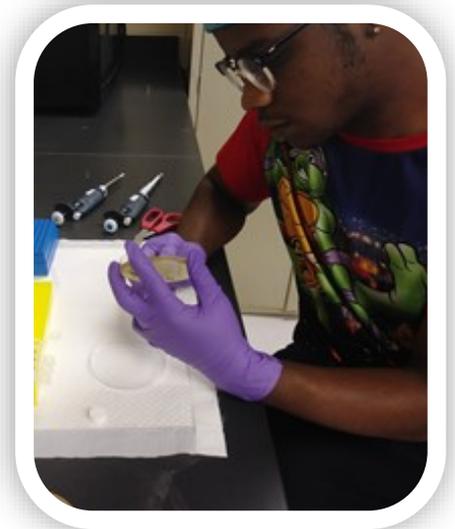


I couldn't think of a better place to begin cultivating my laboratory skills than in my own hometown at Fayetteville State University. I earned the opportunity to work under the mentorship of my previous biology professor, Dr. Shirley Chao, conducting toxicology and entomology research with a patent-pending hemp-based pesticide she and her cohorts developed. This has been my first experience working in a lab in which I developed my own methods for experiments. I can't begin to describe how amazing the opportunity to conduct my own research working independently on my own projects has been. Working with Dr. Chao over the summer has only made me increase the expectations I have for myself continuing in this lab throughout the school year, as well as seeking out opportunities at other programs. Graduate school is about a year and a half away, but the experience I have gained this summer and will make me a much more competitive candidate for M.D./Ph.D. programs.

Marina Better

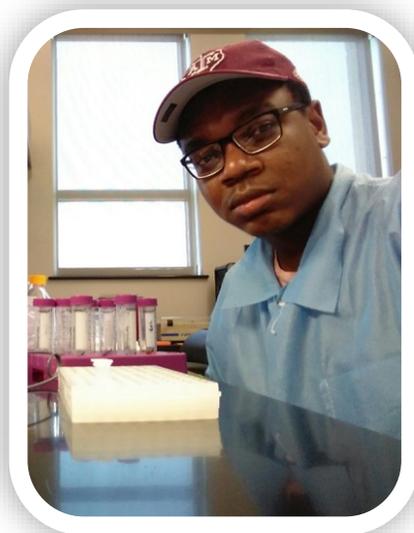
I was given the opportunity to conduct research at Fayetteville State University. My research is entitled "Prevalence of bla AmpC, bla TEM-, bla SHV-, and bla CTX-M-type ESBLs in E. coli and Klebsiella strains obtained from patients at a Fayetteville, NC Hospital". This summer program has taught me skills that have aided me in becoming an exemplary researcher. I have learned different forms of data integration and interpretation. I have gained a better understanding of bacteria and how its resistance to antibiotics is ever increasing and needs to be studied for viable antibiotics to continue to be produced. I plan apply these skills and many others I have learned during my time in future research experiences.

Jeffrey Shipman

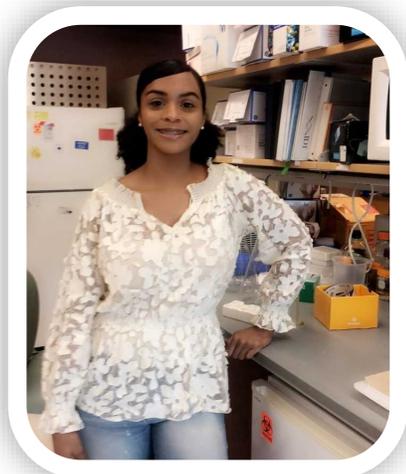


My participation in Summer Undergraduate Research Program in Biochemistry at Texas A&M University has been life-changing. Being at a major research university and learning from experienced biochemists have helped me to mature as a researcher. My project involves discovering the metabolite that is responsible for copper transport to the mitochondria. In biological systems, copper is an essential micronutrient that is utilized by several enzymes that catalyze vital cellular processes, including mitochondrial energy metabolism. Defects in copper transport to the important mitochondrial cuproenzyme cytochrome c oxidase (Cco) impairs mitochondrial respiratory chain (MRC) function. Copper is stored in the mitochondrial matrix in a ligand-bound form. The identity of this ligand is unknown. This ligand is believed to be a metabolite that binds to copper and facilitates its transport to the mitochondrial matrix. In a previous screening using *S. cerevisiae*, the Gohil lab has narrowed down three genes that may be involved in the production of this unknown metabolite: PYC1, GSH1, and MDH2. Using molecular genetics and microbiological techniques, my supervisor Mohammad Zulkifli and I have tested these candidate yeast genes by creating knockout yeast strains through homologous recombination, measuring their growth in extensive growth-based assays on fermentable and respiratory media in different temperatures, and observing the protein expression of Cox 2, a Cco subunit, in the knockout yeast strains.

Shamar Wallace



RISE Scholars takes advantage of extramural research experiences, cont'd.



This summer I, ***Cheyenne Holloman***, spent my internship at the University of Pittsburgh (Pitt) for 2 and a half months. I really enjoyed my experience being here. I did my research on HIV-Vpr in the Department of Structural Biology. Our initial aim for my project was to figure out what the Vpr-binding partner was, so we could stop the integration of Viral genome in Immune cell genome. I learned a lot over the duration of my experiment, including the trial and error that goes into being a research scientist. All of the techniques I've acquired have prepared me to be in even bigger labs, focusing on biochemistry, biophysics, or chemistry. I can take away this experience as a great foundation for pursuit in my Ph.D.

The purpose of this research is to find how various nanoparticles (NPs) interact with each other and epoxy molecules within a composite sample, leading to enhancement in mechanical and thermo-mechanical properties of the same. Nanoparticles used in this study were Montmorillonite nanoclay (MMT), hexagonal boron nitride (hBN), and graphene nanoplatelet (GNP). These nanoparticles have high aspect ratio morphology and exhibit excellent mechanical and electrical properties, and ability to minimize moisture absorption in polymeric composites. Composite samples used in the study were unmodified (neat), samples with individual nanoparticle-fillers, and combination of MMT, and hBN with GNP. Influence of individual and binary nanoparticles on thermal, thermo-mechanical and mechanical properties were characterized and compared to unmodified samples. Furthermore, interaction between different nanoparticles will be characterized based on comparison between results from binary and individual nano reinforcements. Characterization techniques employed were dynamic mechanical analysis (DMA), thermal gravimetric analysis (TGA), differential scanning calorimetry (DSC) and three-point bending flexural test.

Carlin Ashford



I, ***Rashad Baker***, was accepted into Syracuse University chemistry REU program for summer of 2018. At this prestigious university I conducted computational chemistry research in a lab under the mentorship of Bruce Hudson, PhD. I conducted research in the characterization of polyacetylene a conjugated C-C chain with properties of a semiconductor and the potential to be a conductor with proper chemical doping and treatment. Using full configuration interaction (CI) calculations I modeled a theoretical infinite polyacetylene chain that exhibits bond alternation and could possibly have a zero-point energy below the Peierls barrier of which the normal and reverse trans polyacetylene geometry has the same electron energy value. The conduction properties of polyacetylene are influenced by chain length, and physical samples often have cis, trans heterogeneity, covalent interactions, orientational and conformational disorder. The chain-folding defects and lack of diffraction evidence for bond alternation in existing samples in polyacetylene strongly influence its optical properties and makes computational analysis an optimal approach to studying polyacetylene. The experience in the lab and outside of the lab during this program has been a very educational, fun, enlightening experience, the program coordinators, mentors, and graduate students worked hard to provide fun on trips to Niagara Falls, Corning glass museum, glass making class and other exciting events. Being a part of this program provided me with writing and presenting skills and knowledge that I can now apply to be a successful graduate student and effective researcher.



RISE Scholars takes advantage of extramural research experiences, cont'd.

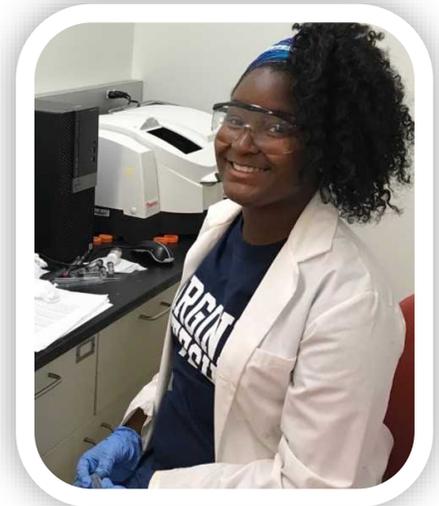


Being a volunteer for the RISE Program has been one of the best experiences of freshman year. The RISE Scholars are a very inspirational and motivated group of students, and I am thankful to be surrounded by such students. I first became interested in the RISE Program through the FSU LEAP Program. Through this initiative, I was exposed to the benefits and objectives of the RISE Program and knew it was an organization I had to be a part of. Not being accepted into a summer research program was very disappointing, but it has only provoked a greater desire to attain one for Summer 2019. I spent Summer 2018 at summer school advancing my GPA, drafting various personal statements for upcoming summer programs, and keeping a keen eye out for opportunities and experiences. My goal is to not only be accepted into numerous summer research programs, but to ultimately earn a Ph.D in a forensic related field resembling, DNA Analysis or Pathology. Though these are my focuses I am receptive to other supplementary subjects.

Lauryn Worley

This summer, I was accepted into the 2018 National Science Foundation Research for Undergraduates (REU) Program at Virginia Tech. I worked in Dr. Edgar research lab with my mentors, Chengzhe Gao and Brittany Nichols who are Ph.D graduate students in the Department of Chemistry. My research project is drug delivery based. The goal of the project is to enhance the solubility and dissolution rate of poor soluble drugs using amorphous solid dispersion (ASD) with cellulose derivatives. I worked with loratadine because it has poor solubility under acidic conditions. During this summer internship, I've gained knowledge on analytical chemistry techniques including Ultra-violet-visible spectroscopy, High-performance liquid chromatography, Attenuated total reflection, Fourier-transform infrared spectroscopy, Differential Scanning Calorimetry, and Nuclear magnetic resonance spectroscopy. This research experience has prepared me to become a more competitive applicant for graduate school and I am thankful for the amazing opportunity to conduct research this summer.

Brittany Anderson



Over Summer 2018, I had the opportunity to continue my research with UNCFSU's genetics professor on the project titled "The Heat-Induced Loss of Resistance in Wheat Plants". During the school year, this project consisted of recording the physical characteristics, or phenotype, of wheat plants after infestation of Hessian flies and various temperatures. This summer, we focused more on different genes expressed under certain conditions. We did this by placing Molly, wheat plant with resistance gene H13, under various conditions. Conditions included 18C infested, 18C non-infested, 35C for 6 and 24 hours infested, and 35C for 6 and 24 hours noninfested. Plant tissues were sampled and sent off for RNA analysis. This opportunity was very rigorous but greatly appreciated. I learned how to adjust to inconvenience and how to slow down and analyze. A huge challenge my team and I faced was making sure the flies and plants were ready at the same time. This prolonged our research, but when we finally figured out when to prepare both the flies and the plants, the project ran smoothly. After long nights, intensive sampling, and all the challenges we've faced, I know this project has taught me what it truly means to be a researcher.

Daria Brown

RISE Cookout: A Family Celebration!!



Visit to Medical University of South Carolina

The 18th Annual Ernest E. Just Symposium took place Friday, Feb. 23, 2018 at the James E. Clyburn Research Center Auditorium. It would be hard to imagine a scenario in 2018 where a young man who worked long and hard to earn the highest grades and honors in his graduating class was denied the opportunity to speak at commencement exercises simply because of the color of his skin. This, according to Deborah Deas, M.D., interim dean of the College of Medicine, is precisely what happened to Ernest E. Just when he was graduating from Dartmouth College in 1907. Every February, MUSC honors the legacy and contributions of the native Charlestonian and renowned scientist.

Each year, this event celebrates the life and scientific achievements of Charleston native and African-American scientist Ernest Everett Just, Ph.D., who made contributions to the areas of cell biology, cell structure and tissue development throughout his career. Just is recognized for coining the phrase, the “Biology of the Cell Surface” in his book in 1939. The phrase explains how a cell responds to cell to cell and cell to matrix interactions. The symposium was established in 1990 to recruit minority students to careers in biomedical science and the health professions. It is sponsored by the offices of the vice president for Academic Affairs and provost, College of Medicine and College of Graduate Studies.

CONGRATULATIONS ARE IN ORDER!!



Zaniya Mark participated in the 9 week program at Augusta University and received the “Ebad Hasan Memorial Award” in the remembrance of a Star Alumni. This award is recognized to a STAR participant who enriches the program with his/her presence, involvement, and commitment to STAR, while always finding time to touch the lives of others with friendship, patience, and respect. There was a speech stated while the Ebad award was given to the recipient. The speech stated, “My oldest brother recalls that Ebad (or Ebaee as we called him) was excited by cartoons, magic tricks and video games. Growing up, his fascination with these activities drew us, his older brother and younger sister, into his world of happiness.

There were many instances of group laugh attacks that we had as siblings growing up, most often sparked by Ebaee. His interest in keeping people laughing and happy through small silly gestures defined him- that is who Ebad was. This recipient are blessed with a generous personality and kind heart whose brilliance inspires everyone around them. The fact that you are a recipient of this award is a testament that you have a friendly, approachable, helpful and trusting nature. It's these very traits that embody my brother Ebad's spirit. He taught me how to respect and care for others. He taught me to be gentle and giving. He taught me what was ethically right and wrong. He instilled in me the curiosity of science and he made me who I am today, both through his life and his death. He was my best friend and my mentor. He touched so many lives and this award recognizes that you have too. You are the helpful hand everyone turns to in their time of need, and you are the person they call when they're having a bad day. You are the person who inspires them, and you are the person they aspire to be. You have brightened so many lives and you have made so many laugh. And I know that through this award you will carry on Ebad's legacy of bringing love and laughter into the lives of those around you.”

FAREWELL TO Mrs. Baldwin after 7 years of Service



Mrs. Cathy Baldwin was the RISE Coordinator for seven years at Fayetteville State University. She was not only a professional, but a motherly figure to the RISE Scholars. Mrs. Baldwin repetitively talked about passion, proactive behavior, and constructive criticism. She would encouraged her students and tell them to follow their passion and not listen to others, but to follow the pathway where you are the happiest. Her favorite saying was, “Don’t be relaxed, make the calls to set your own future”. When she feels her students are becoming discouraged, she would say, “Constructive criticism is great to take in for growth.” Mrs. Baldwin will be deeply missed and the advice she always gave everyone will be forever remembered.

LOOKING AT SMALL ADVANTAGES PREVENTS
**GREAT AFFAIRS FROM BEING
 ACCOMPLISHED.**

-CONFUCIUS

RISE Scholar Leadership to Leadership in the RISE Program

Sharon Ochoa-Rios (FSU RISE Acting Coordinator) and **Brandon Murphy** (FSU Professional Tutor) transitioned from RISE Scholar to RISE Staff. After the departure of Mrs. Cathy Baldwin, these former scholars took upon themselves to become leaders and helped to improve the RISE program. They participated in several events and listened for suggestions to bring together this program as a professional family. In May 2018, their positions ended and they matriculated into their PhD programs. As their position was coming to an end, a FSU Alumni came into the RISE Program as the new RISE Coordinator. Described below is her introduction.



Welcome NEW RISE Coordinator!



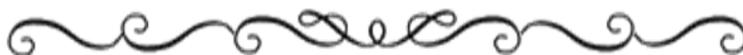
Nakia Walcott was previously a Science Teacher in Cumberland County. She also served as the Program Coordinator for Fayetteville State University Talent Search II. In that capacity, she provided program coordination of high college assistance, summer programming, and college tours. A native South Carolinian, Mrs. Walcott, a mother of three; Rasheme, Tamera and Macario, was born in Fort Jackson, SC and spent her early years in Karlshue, Germany where she learned how to speak German. She moved to Fayetteville, North Carolina in 1986. She received her Bachelor of Science in Biology from Fayetteville State University in 1998 and a Master's Degree in Education from Walden University in 2013. She is currently in pursuit of her Doctorate degree.

Mrs. Nakia Walcott

2018 FSU STEM Symposium

On April 19, 2018, the research symposium was held in the R.J. Student Center, First Floor, Student Center Lounge. This event was collaborated by the Department of Biological Sciences, Department of Math and Computer Sciences, Department of Chemistry & Physics, S⁴ Program, and the FSU RISE Program, McNAIR Program, LSAMP Program, BIO PHI CHEM Club, and Math Club.

There were twenty-three (23) total presenters at this symposium and out of this symposium, there were six (6) students that presented orally. These six presenters included: Laura Frigo (Chemistry major), Marissa Baccas (Chemistry major), Carlin Ashford (Chemistry major), Arshay Grant (Biology Major), Brittany Anderson (Biology Major), and Cassandra Sutton (Mathematics major). During this research event, Dr. Lamont Booker who held a position at the US Food and Drug Administration (FDA) spoke about his experiences and his journey from undergraduate life to where he is at now in life. Currently, he holds a new position as the Director of Toxicology Department at Elkem Silicones USA Corporation in Fort Mill, South Carolina.



What Makes a Ph.D.

What makes a Ph.D. is **NOT** that you never make mistakes.

It's that you take chances with **COOL IDEAS**, trying something out of the box.

Some ideas are wrong, but enough are right that you end up making **SIGNIFICANT** new contributions to knowledge.



CONGRATULATIONS Cristina Young!!



Cristina Young was granted a publication in the **Journal of Iron and Steel Research, International**: “ Interfacial microstructure and mechanical properties of diffusion bonded joints of titanium TC4 (Ti-6Al-4V) and Kovar (Fe-29Ni-17Co) alloys.”

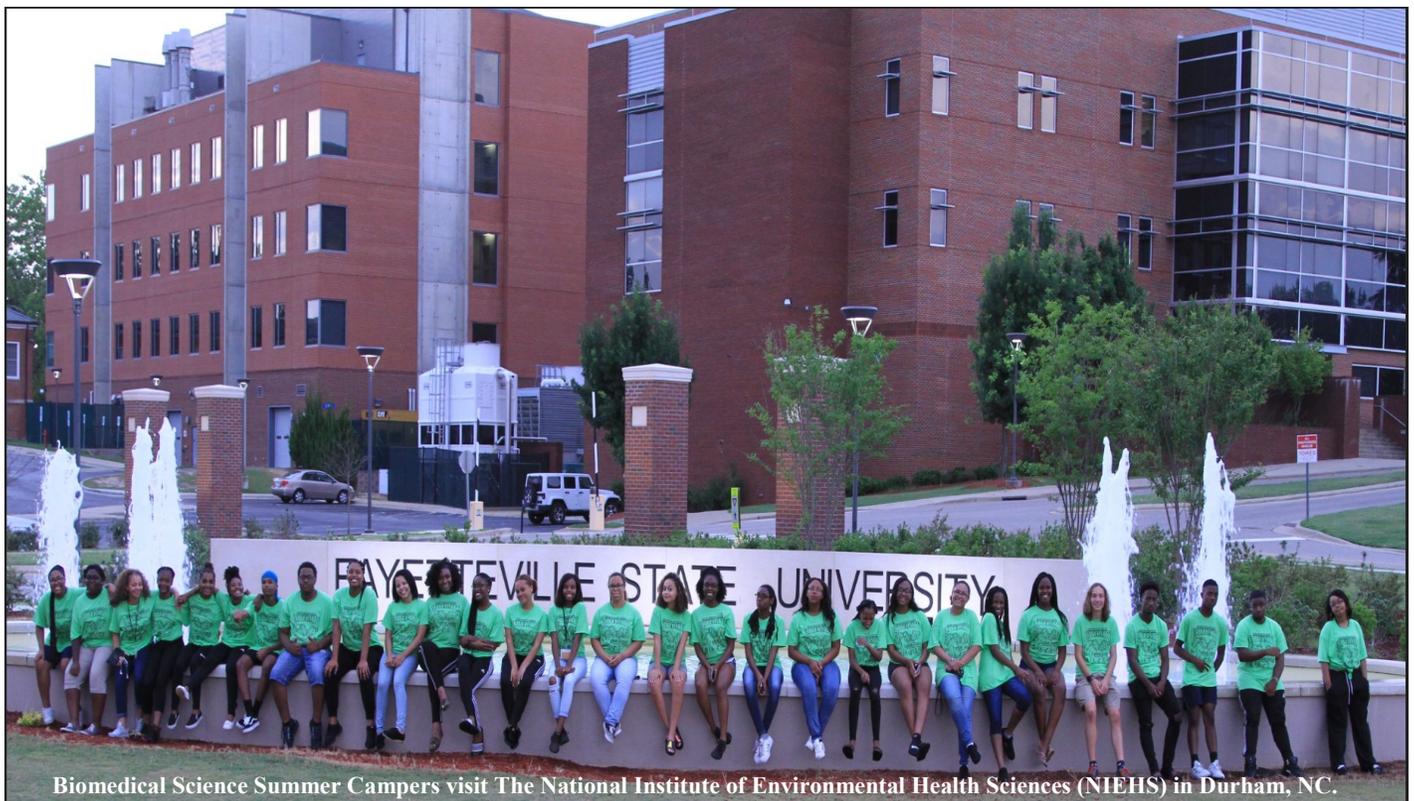
With the collaboration of Fayetteville State University, Southwest Jiatong University, Chinese Academy of Sciences, and the Chengdu Technological University this published study was accepted.

2018 Biomedical Science Summer Camp

“Exploring Cellular Pathophysiology”

Twenty-nine (29) rising high school freshmen through rising seniors participated in the FSU Biomedical Science Summer Camp (FSU-BSSC) from June 17-22. The goal of the one-week, residential math and science enrichment program is to prepare and increase students’ interest in post-secondary education in science technology engineering, and mathematics (STEM). Campers engaged in intensive, laboratory-based studies in the biomedical sciences in which they learned to apply the Scientific Method and critical thinking skills to obtain laboratory results. Students also participated in seminars and workshops to broaden their understanding of health disparities and the critical need for more underrepresented minorities in biomedical research and health careers. Additionally, students attended a field trip to The National Institute of Environmental Health Sciences (NIEHS) in Durham, North Carolina. Finally, students took a comprehensive examination and made final group presentations on their science laboratory projects during the Closing and Awards Ceremony on the last day of the program. Outstanding performing students received awards, while all participants received certificates. Below are videos links of the 2018 BSSC.

<https://youtu.be/kSMfXSO9BlQ>



2018 LEAP/RISE Pre-Freshman Summer Enrichment Program

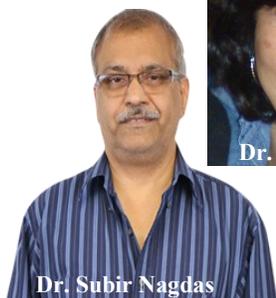
Fourteen (14) Pre-freshman students participated in the *Learning and Engagement at an Accelerated Pace (LEAP)/Research Initiative for Scientific Enhancement (RISE) Summer Enrichment Program* at Fayetteville State University from July 2 - July 30, 2018. The 4-week, residential, bridge program was co-sponsored by FSU University College and the RISE program. The goal of the enrichment program is to prepare incoming freshmen for STEM majors. To this end, scholars participated in intensive academic enrichment activities in the classroom and hands-on laboratory activities in

MATH 129 (Pre-Calculus), Principles of Biology (BIOL 150), CHEM 140 (General Chemistry), ENGL 110 (English Composition I) and UNIV 110 (University Studies). Scholars received academic support in all courses in addition to presenting PowerPoint Presentations on what they learned in each course during weekly Enrichment Seminars on Fridays. The summer enrichment program has proven to provide pre-freshmen with the academic edge necessary to lead in the classroom academically during their freshman year, keep students on track in the STEM major, and facilitate early or on-time graduation. Each week, scholars were also engaged in professional development seminars and social activities to promote success in the STEM major and to help them become better student leaders. Finally, students received leadership training during a two-day Leadership Retreat in Myrtle Beach, South Carolina. The hallmark of the retreat was the Civic/Community Engagement & Service Learning project the scholars participated during the event. The students distributed pamphlets and information on heat stroke, importance of sun screen and the approved SDF, heat exhaustion, and sun burns. The culmination of the LEAP/RISE SEP is the Closing and Awards Ceremony in which scholars present what they have learned over the summer to faculty, students, family and friends. Scholars are also recognized for their program participation and outstanding achievements.



FSU-RISE FACULTY RESEARCH MENTORS & WORKSHOP INSTRUCTORS

We would like to thank our research mentors for giving RISE students the opportunity to train and gain basic research experiences that prepares them for extramural summer research experiences. In many cases, RISE scholars have opportunities to co-author research publications with their mentors. Additionally, RISE mentors are committed coaches who direct the pathways of our students towards Ph.D. degrees. Mentors make a significant connection with students, inspiring them to work beyond the barriers to pursue and succeed in their endeavors. We cannot thank our mentors enough for their unwavering dedication and sacrifices. We appreciate the below 2017-18 research mentors and workshop instructors:



2017 - 2018 FSU-RISE SCHOLAR AWARDS

-*Chastity Ward*: SCHOLAR OF THE YEAR

For having outstanding scholarship, dedication, and program participation

- *Shamar Wallace*: EXCELLENCE AWARD

For earning the highest GPA of 4.0

- *Don Eaford*: DIRECTOR'S AWARD

For exemplifying outstanding attitude, motivation and high spirit



Brain Teaser

What did the scientist say when he found 2 atoms of helium?

What did the angry electron say when it was repelled?

AALLL: What am I??

No ways it ways: What am I??

What do you do with a dead chemist?

Insult + injury: What am I??



Who's Who in the FSU-RISE Office

Dr. James E. Raynor, Jr., Director
Mrs. Nakia Walcott, Coordinator
Mrs. Amita Naik, Lab Manager
Ms. Ky'ara Carr, Case Manager

