

Volume 1, Issue 1

WINSTON-SALEM STATE UNIVERSITY

Fall Newsletter

### A WORD FROM THE DIRECTOR...

The Biomedical Research Infrastructure Center (BRIC) was established in 1996 through initial funding from the National Center for Research Resources (NCRR) and then from the National Institute for Minority Health and Health Disparities (NIMHD) and maintains capacity building activities that are consistent with the long-term institutional objectives of WSSU. The BRIC shares a basic laboratory research building with Wake Forest University School of Medicine (WFUSM) at the Piedmont Triad Community Research Center (PTCRC) and provides a strong biomedical and behavioral research training environment for students, faculty and health professionals focusing mainly on neuroscience, drug addiction, cancer, diabetes and cardiovascular disease research as related to health disparities. WSSU-BRIC and WFUSM enjoy a rich and successful heritage of facilitating collaborations among leading scientists and encouraging faculty to develop and sustain productive research programs. I am confident that this growth and success will continue for many years to come.



Dr. Azeez Aileru, Director

## IN THIS ISSUE

RISE Program				
MARC Program				
Meet the RISE Scholars	3			
Meet the MARC Scholars				
MARC Graduates				
Seminar Series				
Shuttle Service				

### **RISE to MARC**

The BRIC offers two student-centered programs, the Minority Biomedical Research Support-Research Initiative for Scientific Enhancement (MBRS-RISE) Program and the Minority Access to Research Careers Undergraduate Student Training in Academic Research (MARC U\*STAR) Program. Both RISE and MARC are supported by the National Institute of General Medical Sciences (NIGMS), National Institutes of Health (NIH) and are designed to increase the participation of underrepresented minority (URM) students involved in biomedical/behavioral research. The programs nurture undergraduate URM's in a way that induces their interest in and readiness for research careers in the biomedical/ behavioral sciences. Students from various majors including Biology, Chemistry, Exercise Science and Psychology participate in the programs. Scholars receive

extensive hands-on laboratory research experience that also consists of coursework, workshops and seminars designed to introduce students to biomedical/behavioral science careers and leading scientists. The main objective of RISE and MARC is to strengthen the student's academic and research credentials to facilitate their entry into competitive biomedical/behavioral science graduate (PhD) programs. Students may "RISE to MARC" and as part of the commitment to preparing students for excellence, the programs offer students unique opportunities such as summer research internships, Graduate Record Examination (GRE) preparation, publication of their research findings in scientific journals, experience in giving professional presentations at national scientific meetings, and other professional development activities.





**RISE Scholars** 

The RISE Program was initiated in October, 2010 with the students officially starting in January, 2011. RISE scholars must be full-time WSSU freshmen, sophomores, juniors or seniors with a cumulative and major GPA of 2.5 or above. Scholars receive hourly wages while participating in hands-on research with their mentors and are also given the opportunity to travel to one scientific conference per year. During the Spring 2011 semester, there were three seniors, four juniors, two sophomores and one freshman for a total of ten scholars. They all share a common interest in pursuing a PhD in a biomedical or behavioral science. Every week the RISE Scholars met with the MARC Scholars for presentations from a WSSU faculty/staff member or a faculty/staff member from another institution. (See Pg. 7) The RISE Scholars are being groomed to become MARC Scholars in the future.

#### Minority Access to Research Careers





MARC Scholars and Dr. Shea Gilliam-Davis Program Coordinator (front row; 2nd from right)

In the Fall of 2007, the MARC U\*STAR Program emerged at WSSU. This past Spring semester, there were four MARC Scholars, six MARC Affiliates and one Pre-MARC Scholar. The MARC Scholars must be full-time WSSU juniors or seniors with a cumulative and major GPA of 3.0 or above. MARC Scholars receive up to 60% of their in-state tuition and fees and a monthly stipend with the opportunity to travel to one scientific conference per year. The MARC Affiliate Scholars and the Pre-MARC Scholars do not receive any financial assistance; however, they have the opportunity to reap all the other benefits of this distinguished program.

Nine MARC Scholars participated in the 10th Annual Biomedical Research Conference for Minority Students (ABRCMS) in Charlotte, NC from November 10-13, 2010. During the four-day conference eight of the scholars presented their research. James Johnson, Jr. won an award in the category of Molecular Biological Sciences. His poster presentation entitled "Angiotensin-(1-7) Administration Reduces Radiation Induced Pulmonary Injury" was rated among the best and well thought-out projects.

The 2010 ABRCMS meeting had the largest attendance to date, with nearly 3,300 students, faculty, recruiters and administrators. Over 700 institutions were represented and more than 1,500 students presented their research. The theme of the meeting was "The Future of Science: Diverse People, Diverse Needs."

This year, the ABRCMS meeting will take place in St. Louis, Missouri from November 9th - 12th. Once again, the MARC Scholars will demonstrate the progress they have made on each of their chosen projects.

# **MEET THE RISE SCHOLARS**



Ejiroghene Arhagba



Domonique Battle



Jamil Hopkins

Ejiroghene Arhagba received a BS degree in Chemistry this past May. He assisted Dr. Azeez Aileru with research on the AT-II Receptor Localization project. After graduation, Mr. Arhagba continued to work under the tutelage of Dr. Aileru on a new project. He performed extracellular recoding from neurological tissue slices using an electrophysiological technique. This procedure is used to determine the mechanisms involved in the neuronal control of cardiovascular disease. Mr. Arhagba is currently enrolled in the Post-baccalaureate Research Education (PREP) at Wake Forest University School of Medicine.

Domonique Battle is a junior Biology major. She is expecting to graduate in May, 2013 and subsequently attend medical school with the goal of becoming a pediatrician. Her mentor is Dr. Stephanie Dance-Barnes. Ms. Battle is assisting Dr. Dance-Barnes with the synthetic treatment for basal-like cancerous tumors. She studied abroad and taught English, History and Mathematics in West Africa: Ghana, Togo and Benin in May and June of this year.

Jamil Hopkins is a senior majoring in Biology with a minor in Neuroscience. Dr. Sara Jones of Wake Forest University is his mentor. Her research involves measuring dopamine neurotransmitters in several different models of drug and alcohol abuse. Mr. Hopkins participated in the Neuro National Science Foundation and Research Experience for Undergraduates (NSF REU) at the University of Missouri as part of his summer research experience. After graduation, in December 2012, he plans to attend medical school or graduate school.

**BENEFITS:** 

Ashlee Clark is a senior Biology major expecting to graduate in May, 2012. She plans to attend graduate school to study either pathology or physiology. Ms. Clark's mentor is Dr. Jeffrey Overholt. Her research project title is "The Effect of Hydrogen Sulfide on the Human Etherago-go Related Gene (HERG) current heterologously expressed in Human Embryonic Kidney 293 Cells." This summer, Ms. Clark participated in the Summer Undergraduate Research Experience (SURE) Program at WSSU under the guidance of Dr. Tennille Presley. She studied the relationship between HSP90 and eNOS in type-2 diabetes.

Anthony Dixon is a senior and wants to continue on to graduate school after completing his BS degree in Exercise Science in May, 2012. Mr. Dixon is being mentored by Dr. Debra Diz. His research project title is "Microinjection of Various Compounds to See the Brain Reflex Control of Blood Pressure and Blood Glucose Levels During Aging." Mr. Dixon is presently in the Undergraduate Summer Research Fellowship at WSSU and worked with Dr. Michael McKenzie in the Human Performance and Sports Science.

Ashley Tucker is a junior Psychology major. Upon graduation in May, 2013, she plans to obtain a PhD in industrial and organizational psychology. Ms. Tucker's mentor is Dr. Gary Bond. "Explicit and Implicit Trust in a Complex Land Navigation Task" is the title of her research project. This past summer, Ms. Tucker continued to explore human behavior with her mentor through a new project. She and Dr. Bond focused on identifying key stressors in the workplace and the relation of these stressors to employee performance. Ms. Tucker is investigating both projects this fall.



Ashlee Clark



Anthony Dixon



Ashley Tucker

B	RS		<ul> <li>Full-time academic standing at WSSU</li> <li>Freshman, Sophomore, Junior or Senior Classification</li> </ul>
			• Biology, physics, chemistry, psychology, computer science or math majors
			Real interest in biomedical/behavioral research
			Intent to pursue a PhD in the biomedical or behavioral sciences

- A cumulative and major GPA of 2.5 or better
- Hands-on research experience (15 hours per week)
- Hourly wages of about \$8,000 per year
- Opportunity to travel to one scientific conference per year
- Participation in professional development seminars and activities

BRIC NEWSLETTER 3

## **MEET THE RISE SCHOLARS**



Kimberly Hunter

Kimberly Hunter is a senior majoring in Psychology. After graduation in May 2012, she wants to obtain a PhD in Cognitive Psychology. Ms. Hunter is being mentored by Dr. Gary Bond. The title of her research project is "The Role of Race and Gender Bias in Deception Detection." Ms. Hunter continued working with Dr. Bond throughout the summer. Her summer research project involved testing groups of people to see if their acoustic synchrony is directly correlated with implicit trust. Kiara Vann is a senior Biology major with a minor in Neuroscience completing a BS degree in December of this year. She plans to continue on to graduate school to study Pathology and Neuroscience. Mentored by Dr. Jeffrey Overholt, Ms. Vann's research project explores cellular mechanisms of hypertension at the superior cervical ganglia. This past summer, she attended the Vascular Biology-Short Term Training Program for Minority Students at Vanderbilt University in conjunction with Meharry Medical College.



Kiara Vann

## MEET THE MARC SCHOLARS



Ashley Moore

Ashley Moore is a senior majoring in Biology who has been with the MARC Program since August, 2010. She began as a MARC Affiliate but is now a MARC scholar. Mrs. Moore is working on two research projects with her mentors: Dr. JaNae Joyner and Dr. David Cline. She assist both mentors on the project entitled "A Comparison of Lifestyle and Patient Inertia Factors Among Emergency Department Patients and Church Community Members." Dr. Cline is her mentor for her other project entitled "Referral versus Early Medication for Emergency Department Identified Hypertension." Mrs. Moore participated in the Excellence in Cardiovascular Sciences (EICS) Program at WFUSM.

Ashley Taylor is a senior Chemistry major who also started with the MARC Program in August, 2010 as an affiliate but is now a MARC scholar. Ms. Taylor is mentored by Dr. Sayo Fakayode. Her research project title is "Fluorescence Investigation of the Binding Mechanism of BSA-Hg and BSA-Gluthione Complexes." For three weeks in May, she studied abroad and taught English, History and Mathematics in South Africa. She was involved in the Summer Undergraduate Research Program (SURP) at New York University/ Center for Neural Science. Ms. Taylor conducted a research project under the direction of a mentor during the ten-week program.



Ashley Taylor

### **MEET THE RISE/PRE-MARC SCHOLAR**



Michelle Wright

Michelle Wright was the only freshman among the RISE and MARC Scholars during the Spring 2011 semester. She is currently a sophomore and one of three Psychology majors within the RISE Program. After graduation in May 2014, she plans to attend graduate school to obtain a PhD in Neuropsychology. Ms. Wright is working on a project with Dr. David Mount that involves the risk factors of dementia to aid in the development of a prevention for senior citizens. This research initiative also includes investigating the metaanalysis on dementia to aid in the creation of better prevention for minorities. Ms. Wright became a Pre-MARC Scholar in January, 2011 and is being honed to eventually become a MARC Scholar. She may potentially be one of the first WSSU students to "RISE to MARC."

#### The MARC U\*STAR Program also offers the Pre-MARC and MARC Affiliate Programs:

Pre-MARC Scholars must have Freshman or Sophomore classification and the requirements listed on page 5.

MARC Affiliate Scholars must have all the requirements listed on page 5.

The MARC U\*STAR and MBRS-RISE Programs at WSSU are committed to increasing minority participation in biomedical and behavioral research and admission into PhD or MD/PhD programs.

Further questions may be directed to Dr. Shea Gilliam-Davis at (336) 761-5896. BRIC Website: https://www.wssu.edu/bric

## MEET THE MARC AFFILIATE SCHOLARS



Brittany Cleckley



Samantha-Rae Dickenson



Kamedra McNeil

**Brittany Cleckley** is a junior Biology major. She began the MARC Program in August, 2010. Dr. Jeffrey Overholt is her mentor. The research that takes place in his laboratory uses a wide range of electrophysiological, biochemical, molecular, and imaging techniques to investigate the cellular mechanisms that control the cardiovascular system. Knowledge gained from these studies could lead to therapeutic strategies that alleviate the toxic side effects of drugs on the heart and in genetic forms of hypertension.

Samantha-Rae Dickenson is a senior majoring in Biology. She has been a part of the MARC Program since August, 2010. Ms. Dickenson's mentor is Dr. Azeez Aileru. The title of her research project is "The Effect of Exercise on the Expression of Alpha 1 and Alpha 2 Isoforms in Oubain-Induced Hypertension." She continued her research with Dr. Aileru throughout the summer. Ms. Dickenson plans to obtain a Master's degree in Public Health after graduation in May, 2012. She will then apply to medical school to concentrate in the areas of obstetrics and gyncology.

Kamedra McNeil is a senior Molecular Biology major. She began the MARC Program in April, 2010. Ms. McNeil's mentor is Dr. Manju Bhat. His research focuses on the neurophysiology of calcium signaling in sensory neurons and the role of calcium channels in acute and chronic pain. Ms. McNeil participated in the Summer Scholars Program at the University of Delaware. After graduation in May 2012, she would like to attend graduate school or intern with a Crime Scene Investigation Unit. Joab Odera is a senior majoring in Molecular Biology. He has been in the MARC Program since January, 2009. Dr. Johanna Porter-Kelley is his current mentor. Her research involves investigating the presence of novel MicroRNA sequences within Leishmania RNA virus 1. Mr. Odera continued his work with Dr. Porter-Kelley, this summer, as part of the Undergraduate Research Fellowship Program at WSSU. He intends to apply to an MD/PhD program after completing his BS degree in December, 2012.

Remi Royal received her BS degree in Biology in May. She began the MARC Program in August, 2009 and has had two mentors: Dr. Brian McCool and Dr. Dinesh Singh. While matriculating at WSSU, her research involved the appetitive behavior and consumptive behavior between three experimental groups of rodents based on their ethanol consumption. Ms. Royal is attending Rutgers University, The State University of New Jersey to pursue a Master of Science in Physiology and Integrative Biology.

Hawanatu "Eve" Savage is a senior Molecular Biology major graduating in May, 2012. She has been an affiliate since April, 2010. Dr. Daniel Williams is her mentor. His research entails characterizing diphenylpyraline derivatives at GABA receptors. She attended the Geoscience Summer Undergraduate Research Experience (G-SURE) at WSSU under the tutelage of Dr. Nickolay Hristov. Ms. Savage plans to attend medical school to become an obstetrician/gynecologist.



Joab Odera



Remi Royal



Eve Savage







Ramine Alexander

Ramine Alexander completed a BS degree in Exercise Science this past May. She was a MARC scholar from June, 2010 to May, 2011. Ms. Alexander's most recent mentor was Dr. Melicia Whitt-Glover. Her research project title was "Instant Recess: Impact of 10-minute Exercise Breaks During the Day on Health and Related Behaviors in Children." Ms. Alexander entered the Post-Baccalaureate Research Education Program (PREP) in Public Health at Virginia Polytechnic

Institute and State University this fall.

**Tempestt Evans** graduated with a BS

December 2010. Since January 2011,

Ms. Evans has been working with her

former mentors Dr. Caroline Bass and

University Baptist Medical Center. This

past summer, Ms. Evans participated in the

Medical Education Development Program

at UNC-Chapel Hill. She plans to attend

Dr. Allyn Howlett at Wake Forest

dental school in the Fall of 2012.

degree in Biology in December, 2010. She

was a MARC scholar from January 2009 to

Jacqueline Jackson graduated in May, 2010 with a BS degree in Molecular Biology. She was a MARC Scholar from January, 2008 to January, 2009. She was mentored by Dr. Dinesh Singh while completing her degree at WSSU. At the present time, Ms. Jackson is enrolled in the Cancer Biology Graduate Program at the University of Wisconsin – Madison. She plans to obtain a PhD in Oncology.



Jacqueline Jackson



Tempestt Evans



Antentor Hinton, Jr. graduated in May, 2010 with a BS degree in Biology. He was a MARC Scholar from August, 2008 to May, 2010. While matriculating at WSSU, his mentors were Dr. Karin Scarpinato and Dr. Weiling Zhao. Mr. Hinton is enrolled in the PhD program in Cell and Molecular Biology at the Graduate School of Biomedical Sciences at Baylor College of Medicine in Houston, Texas.

Antentor Hinton, Jr.

NO PICTURE

**AVAILABLE** 

**Tierra Rudd** completed a BA degree in Psychology in May, 2008. She was the first MARC Scholar at WSSU from August, 2007 to May, 2008. Her mentor was Dr. David Mount. Currently, Ms. Rudd is attending the University of West Florida pursuing a Master of Arts degree in Psychology, Counseling Specialization. James Johnson, Jr. graduated this past May with a BS degree in Chemistry. He was a MARC Scholar from June, 2009 to May, 2011. His most recent mentor was Dr. Charles Ebert whose research project examined the biochemical basis of the interaction between keratin -derived materials and Schwann cells. Mr. Johnson continued working with Dr. Ebert this past summer. He is presently attending the PREP at Wake Forest University School of Medicine.

Jasmine Richardson obtained her BS degree in Chemistry this May. She was a MARC Scholar from January, 2009 to December, 2010 and a RISE scholar for the Spring 2011 semester. Ms. Richardson's mentor was Dr. Allyn Howlett. They investigated cannabinoid and endocannabinoid compounds that stimulate the CB1 cannabinoid receptor and regulate signal transduction pathways in cultured neuronal cells. She continued working with Dr. Howlett this past summer. Ms. Richardson is attending Campbell University College of Pharmacy & Health Sciences.

Lassiter Speller graduated in May, 2009 with a BA degree in Psychology. He was a MARC Scholar from August, 2007 to May, 2008. His mentor was Dr. Gary Bond. Mr. Speller is presently enrolled in the PhD program in Cognitive/Experimental Psychology at Ohio State University.



James Johnson, Jr.



Jasmine Richardson

NO PICTURE AVAILABLE

# SPRING 2011 SEMINAR SERIES

While classes were in session during the Spring semester, the MARC and RISE Scholars met every Wednesday afternoon for one hour to attend the Seminar Series. Accomplished scientists/alumni and WSSU faculty and staff provided insight on research, graduate school and future careers.

The Opening Session was held on January 12th. **Dr. Azeez Aileru,** the Director of the BRIC welcomed the first RISE Scholars and the MARC Scholars.

On January 19th, **Dr. Shea Gilliam-Davis**, the Program Coordinator of the MARC U\*STAR and the MBRS-RISE Programs, conducted a class for the scholars entitled, *Ethics in Science: An Introduction to the Ethical and Responsible Conduct of Research.* 

On January 26th, **Dr. Anna Lee**, Associate Professor of Psychology, Behavioral Sciences and Social Work at WSSU, focused her talk on health disparities and psychosocial factors that influence interpersonal decision-making.

On February 2nd, **Dr. Gilliam-Davis** covered professional development topics, i.e. interviewing skills and internet etiquette, with the scholars.

On February 9th, Dr. Manju Bhat, Assistant Professor of Physiology in the Life Sciences Department at WSSU, spoke to the scholars about his educational journey. He emphasized the importance of pursuing higher education and how hard work, patience and perseverance will lead to career opportunities and personal success. Dr. Bhat then gave an overview of his current research project. He and his assistants are interested in understanding the molecular mechanisms of acute and chronic pain, which is a major health problem in this country. In particular, his research team is investigating the mechanisms of intracellular calcium signaling in how sensory neurons detect touch versus painful stimuli and transmit these signals to the central nervous system.

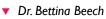
On February 16th, **Dr. Cheraton Love,** Adjunct Professor of Biology and Microbiology, Life Sciences Department at WSSU, discussed her love for research. Dr. Love is an alumna of WSSU and earned a PhD in Microbiology and Immunology from Wake Forest University. She presented the research from her doctoral dissertation which entailed the effects of Bordetella Polysaccharide (Bps) for biofilm development in the respiratory tracts of mice. After Dr. Love's presentation, the scholars were then enlightened with experiences of and encouraging words from **Dr. Charles Wesley Ford, Jr.** who is the Dean of the College of Arts and Sciences and a Professor of Computer Science.

On March 2nd, the scholars had the opportunity to interact with **Dr. Tennille Presley,** Assistant Professor of Physics in the Department of Chemistry at WSSU. She is the newest Principal Investigator with the BRIC. The crux of Dr. Presley's research is the study of oxygen metabolism, nitric oxide and free radicals, particularly as they relate to diabetes, cardiovascular disease and aging in African Americans.

On March 16th, **Dr. Saami Yazdani**, Research Scientist, at CVPath Institute, Inc. in Gaithersburg, Maryland introduced the scholars to cardiovascular pathology (in particular, atherosclerosis and sudden coronary death). Dr. Yazdani's discussion also included the assessment of catheterbased clinical devices and the development of novel in vitro models to measure stent performance.

On March 23rd, **Dr. Carnell Hampton,** Assistant Professor in Radiation Oncology at Wake Forest University School of Medicine (WFUSM) discussed medical imaging as applied to the practice of radiation oncology. He is engaged in applied medical physics research that is clinically focused. Dr. Hampton is beginning to expand into more transitional research projects that will bring innovation to technology for improved patient care.

Dr. Saami Yazdani 🕨







▲ Dr. Charles W. Ford, Jr.

The annual Symposium for Young Neuroscientists and Professors of the South East (SYNAPSE) Conference was held at Wake Forest University on March 25th and March 26th. The conference commenced with a banquet and a pre-meeting address by **Dr. Manju Bhat.** 

On April 6th, **Dr. Bettina Beech** who is the Co-Director of the Maya Angelou Center for Health Equity at Wake Forest University and a Professor in the Department of Social Sciences at WFUSM delved into the role of nutrition in prevention of chronic diseases.

On April 13th, **LaMonica Singleton,** Director of Career Services at WSSU touched on several career development topics.

On April 20th, **Dr. Anthony Philadelphia**, Director of Counseling Center at WSSU gave an overview of the services offered at the Counseling Center.

On April 27th, the Closing Ceremonies took place. The MARC and RISE scholars were given words of encouragement and presented with certificates by **Dr. Gilliam-Davis** and **Ms. Élise Rodney,** Program Assistant of the BRIC.



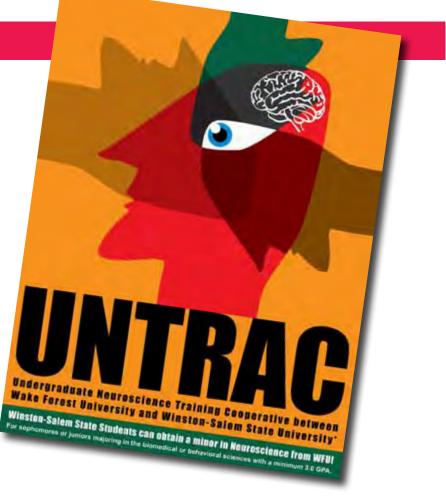
Dr. Azeez Aileru

Dr. Cheraton Love



## UNTRAC

UNTRAC is a two-year program that prepares underrepresented minorities to pursue careers in neuroscience leading to the Ph.D. or M.D. UNTRAC students take classes on the WFU Reynolda campus, at WFU School of Medicine or at WSSU Biomedical Research Center. Students receive free WFU tuition and fees (13 hours), a free laptop computer, a free GRE or MCAT class and a free trip to the annual Society for Neuroscience meeting. Three WSSU students are currently enrolled in the program: Jamil Hopkins, Genea Turner and Kiara Vann. For more information, contact Dr. Azeez Aileru (ailerua@wssu.edu / 336-761-5899).





## **RAM SHUTTLE #3**

During the Fall and Spring semesters, WSSU provides shuttle service to the **Biomedical Research Infrastructure** Center (BRIC) from two locations on campus. The Ram Express #3 departs from the Wilveria B. Atkinson Science Building (WBA) Stop every hour on the hour from 8am - 5pm. At about 3 minutes after the hour, it arrives at the R. J. Reynolds Building (RJR) Stop. The shuttle travels from the RJR Stop directly to the Piedmont Triad Community Research Center (PTCRC) at 115 South Chestnut Street where the BRIC is located. The Ram Express #3 operates from 8am - 5pm, Monday through Friday.

**Questions or concerns:** contact Ray Famble in the Transportation Department at 416-1739.