



**WINSTON
SALEM
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UNIVERSITY**
**BIOMEDICAL
RESEARCH
CENTER**



BIOMEDICAL RESEARCH INFRASTRUCTURE CENTER

Volume 2, Issue 1

WINSTON-SALEM STATE UNIVERSITY

Fall 2014 Newsletter

A MESSAGE FROM THE DIRECTOR...

The Biomedical Research Infrastructure Center (BRIC) focuses on several research areas which include basic biomedical and translational sciences to promote the elimination of health disparities. Basic and translational research conducted at BRIC includes neurophysiology of pain, control of the cardiopulmonary systems, cardiovascular diseases, diabetes, neurological disorder, developmental biology, and alcohol/substance addiction. Researchers in these areas use cutting edge molecular, cellular, physiological, behavioral, and bioinformatics technologies to contribute to the discovery of new knowledge in science and technology. They also provide a greater understanding of the nature of health disparities, as well as the development of other researchers who may devote their careers to biomedical sciences. The ultimate goal of BRIC is to prevent common diseases such as heart disease, diabetes, hypertension, substance addiction, cancer and nociception so that people can live healthier and fuller lives. In our quest to foster interdisciplinary collaboration, we recently acquired a \$500,000 equipment grant from the Department of Defense (DoD) for a state-of-the-art inverted microscope essential to record activity from live cells on a minute-to-minute basis for collaborative, multi-user faculty research projects. The microscope is used to facilitate the advancement of a cadre of biomedical research projects and is instrumental in training undergraduate students at Winston-Salem State University (WSSU) in the STEM fields. BRIC's effort to enhance underrepresented student training and access to graduate or professional fields in the biomedical sciences led to another 5-year award of \$756,755 from the National Institutes of Health (NIH) to support the MARC U*STAR student-centered training program. This represents a second 5-year cycle of the program at WSSU. BRIC continues to enjoy a rich and successful heritage of fostering collaboration among WSSU faculty and encouraging biomedical science training of its students. I believe the Center is poised to foster collaboration across disciplines that will strengthen capacity-building in research, training, and technology advancement via shared resources.



Dr. Azeez Aileru, Director

of MARC Affiliates are selected from a relatively large applicant pool that serves to leverage the WSSU MARC program for greater institutional impact. MARC Affiliates participate in all MARC activities, including research in the laboratory and weekly meetings as well as receive academic support. All MARC Scholars at WSSU perform mentored scientific research throughout the academic year, attend weekly journal club meetings, participate in professional development activities, present their scientific findings at national meetings, prepare for and take the GRE, receive summer research experience, and graduate education guidance.

Maximizing Access to Research Careers

MARC U*STAR

Undergraduate Student Training in Academic Research

The Maximizing Access to Research Careers Undergraduate Student Training in Academic Research (MARC U*STAR) program is a T34 program supported by the National Institute of General Medical Sciences (NIGMS), a branch of the NIH. Beginning in 1977, the program is instrumental in enhancing the training of underrepresented students in biomedical research careers.

The MARC U*STAR program provides meaningful and productive mentored research training for undergraduate students who are underrepresented in the biomedical sciences while preparing them for a postgraduate education leading to a PhD, MD/PhD, or other PhD combined professional degrees in the biomedical or behavioral science field. The program aids in strengthening science course curricula, the pedagogical skills of faculty, and the biomedical research training at institutions with a high enrollment of underrepresented students. The program also provides academic support and professional development to motivate and develop trainees by enhancing

students' academic capacity and, ultimately, increasing the pool of underrepresented individuals in the biomedical sciences.

At WSSU, the MARC U*STAR program includes students in all four years of their undergraduate training. Freshman and sophomores (lowerclassmen) are eligible to be pre-MARC trainees and receive the professional development training with the intention that they will apply to be a MARC Scholar during their junior and senior years (upperclassmen). The upperclassmen are selected based on those with a superior overall GPA, majoring in a biomedical or related science field, who have expressed an interest in pursuing postgraduate education leading to a PhD or MD/PhD in biomedical or behavioral science. The upperclassmen must participate in the program during the final two years of their undergraduate education.

Students who have an interest in pursuing a PhD in biomedical or behavioral science, but do not meet all of the requirements to be in the program can be a MARC Affiliate in their junior and senior years. This comparative cohort

IN THIS ISSUE

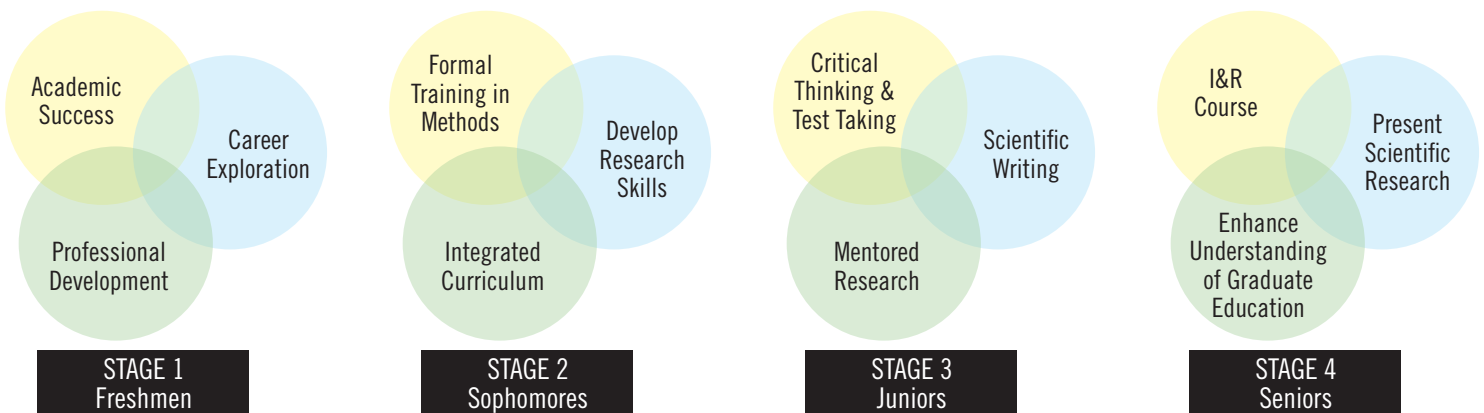
MBRS-RISE Program	2
MARC & RISE Graduates	3
WSSU Scholarship Day	4
Scholar Publications	4



The Minority Biomedical Research Support - Research Initiative for Scientific Enhancement (MBRS-RISE) program, was founded in 1972 and is supported by the National Institutes of Health (NIH), National Institute of General Medical Sciences (NIGMS). The goal of the RISE program is to increase the number of students, from underrepresented groups in biomedical sciences, who enter into and successfully complete PhD degrees in these fields. This developmental program provides support to institutions with a commitment and history of honing students from populations who are underrepresented in the biomedical sciences as defined by the NIH. By supporting institutions, like WSSU, with well-integrated activities designed to strengthen students' academic preparation, biomedical research training and professional skills, the RISE program aims to help reduce the gap between underrepresented and nonunderrepresented students with PhD degrees in the biomedical science field.

The RISE program at WSSU consists of a multi-stage training model, grooming underrepresented undergraduate students starting in their freshman year straight through to their senior year with a focus on increasing the number of students entering and completing graduate education in the biomedical sciences.

RISE: 4 Stages of Training Model



RISE Scholars (lowerclassmen) are students in their freshman and sophomore years who begin in a supportive peer-learning community and are exposed to different research careers where they participate in professional development activities and workshops, as well as take an intensive laboratory research methods course in their sophomore year. RISE Fellows (upperclassmen) are selected in their junior and senior years to perform mentored research activities that expose them to cutting-edge research in the biomedical and translational fields. In addition, they are better prepared for the graduate record examination (GRE), they serve as peer mentors for the lowerclassmen (RISE Scholars), and take a scientific writing course and a biomedical/behavioral research techniques course.

The WSSU RISE program has a primary focus on biomedical/behavioral sciences combined with an approach of garnering participation of incoming freshmen who will participate in activities, which are aimed at maximizing the students' academic performance, as well as informing them of the benefits of pursuing research-related careers in the biomedical sciences. It also has a regimen of progressive self and program selection through the four-stage training model that will enhance the pool of qualified and interested students who will pursue advanced preparation as WSSU RISE Fellows or WSSU MARC Scholar cohorts. All RISE students are trained to develop research laboratory skills, are exposed to the expectations of graduate education, attend scientific conferences, and are part of a peer support group throughout their participation in the WSSU RISE program.

MARC, MARC Affiliates & RISE Graduates: WHERE ARE THEY NOW?

MARC & MARC Affiliate Graduates:

Ramine Alexander is in her third year of the PhD program in Human Nutrition, Foods and Exercise at Virginia Polytechnic Institute and State University (Virginia Tech). She recently added Public Health to her plan of study.

Antentor Hinton, Jr. is a fourth year PhD student in the Integrative Molecular and Biomedical Science (IMBS) program at Baylor College of Medicine where he works under Yong Xu, MD, PhD studying how estrogen responsive neurons, in the amygdala, regulate hypertension.

James Johnson, Jr. is in his third year as a PhD student in Biomedical Sciences with a major emphasis in Neuroscience at Meharry Medical College. He is working with Dr. Eun-Sook Lee on a project entitled "Effect of Valproic Acid on Manganese-Induced Impairment of Glutamate Transporters."

Lassiter Speller is completing his PhD degree in Cognitive/Experimental Psychology specializing in Human Performance at The Ohio State University. Recently, his abstract was accepted to The Society for Psychophysiological Research 54th Annual Meeting in Atlanta, Georgia.

Ashley Taylor is in her third year of pursuing a PhD degree in Chemistry at Louisiana State University. She is working in a polymer synthesis lab under the direction of Dr. Donghui Zhang in the macromolecular division.

Tempestt Evans is at the University of North Carolina at Chapel Hill School of Dentistry. She is in the Class of 2018.

Jasmine Richardson is in the PharmD program at Campbell University College of Pharmacy & Health Sciences. She graduates in May 2015.

Samantha-Rae Dickenson is as an Accreditation Specialist at the Council of Education for Public Health in Silver Spring, Maryland. She completed an MS degree in Public Health at UNC-Charlotte in May 2014.

Jacqueline Jackson is currently working for Promega Corporation in Madison, WI as a Production Scientist. She obtained her MS degree in Cancer Biology in December 2013 at the University of Wisconsin-Madison.

Kamedra McNeil is a Forensic Science Technician at the Department of Forensic Science in Washington, D.C. She recently received an MS in Computer Information Systems from Strayer University. Ms. McNeil plans to further her education by obtaining a PhD degree in either Forensic Biology or Biotechnology.

Tierra Rudd is presently the Assistant Women's Basketball Coach at WSSU. She holds a Master of Arts degree in Psychology with a specialization in Counseling from the University of West Florida.

Jamila Green is in her second year of the MA program in Community Social Psychology at the University of Massachusetts Lowell. She recently had an abstract on African American women and healthcare accepted in Boston College's Diversity Challenge. Ms. Green co-authored a paper with her former mentor, Dr. Dawn Henderson of WSSU, in the International Journal of Child, Youth, and Family Studies.

Ashley Moore is pursuing a Master of Public Health degree at Liberty University in Lynchburg, Virginia. Upon completion, she plans to apply to Liberty's medical school.

Da'Lauren Mouzon-Smith is currently in her first year of the MS Education program at Johns Hopkins University. She graduated in May 2014 with a BA degree, summa cum laude, in Psychology.

Manuela Rigaud is in the second year of the MA program in Developmental Psychology at the Teachers College, Columbia University in New York City. She will receive her degree in December 2014.

Jatrya Rivers is pursuing her Master of Science degree in Public Health at UNC-Charlotte. She will complete this degree in May 2015.

Domonique Battle is currently working at the Greensboro Housing Coalition focusing on Homelessness Prevention and Healthy Homes. She recently completed the Postbaccalaureate program at UNC-Greensboro where she focused on Immigrant and Refugee Health and Health Problems of Low Income Groups.

Brittany Cleckley is the Director of Client Relations for a NC-based insurance company. She will be pursuing a Master of Public Health degree, in the very near future.

Micha Myers is currently employed in Charlotte and is applying to PhD programs in Clinical Psychology. She is actively working on two manuscripts with Dr. David Mount of the Maya Angelou Center for Health Equity at Wake Forest Baptist Medical Center.

Joab Odera is a Research Associate at Tengion, Inc. working under Dr. Dominic Justewicz. He is studying the use and development of new analytical methods to further understand INR tissue regenerative products.

Eve Savage is currently working as a Medical Technician at Magnolia Glen Assisted/Retirement Home in Raleigh, NC. She will be applying to nursing school in the near future.

Edie Pettiford graduated in May 2014 with a BS degree, magna cum laude, in Exercise Science. She plans to apply to a Master's degree program in Public Health soon.

Chinaemeze Kelsey Okoro will complete his BS degree in Exercise Science in December 2015. He attended two leadership conferences, this past summer.

RISE Graduates:

Taylor Harris is attending the University of South Florida in Tampa working towards a PhD in Analytical Chemistry. In May 2014, she completed her BS degree, magna cum laude, in Chemistry.

Kiara Vann is in her third year in the PhD program in Biomedical Sciences at Morehouse School of Medicine. She was the second author on a recent publication.

Remi Royal finished a second Master's degree in Secondary Education with a certification in Biology at Chestnut Hill College (Philadelphia, PA) in August 2014. She completed her Master of Science degree in Physiology and Integrative Biology at Rutgers University in January 2013.

Ashlee Clark graduated with her MS degree in Neuroscience at Wake Forest University Health Sciences in May 2014.

Kimberly Hunter is presently working as a Data Analyst at Johnson C. Smith University. She received her MA degree in Experimental Psychology at New Mexico State University in August 2014.

Ejiroghene Arhagba is in the second year of the MS degree program in Chemistry at North Carolina A&T State University.

Anthony Dixon completes his MS degree in Occupational Therapy at WSSU in December 2015.

Ebone Evans is studying abroad in Costa Rica at the Universidad Veritas as she applies to medical school for entry in Fall 2015. She graduated in May 2014 with a BS degree, summa cum laude, in Biology. Ms. Evans recently completed the Diversity Summer Internship Program at Johns Hopkins Medicine Institutions.

Michelle Wright is currently working on a Master of Public Health degree with a concentration in Community Health Education at the University of Tennessee, Knoxville. She graduated in May 2014 with a BA degree, cum laude, in Psychology.

Georges I. Guillaume graduated in May 2014 with a BS degree, magna cum laude, in Chemistry. He plans to attend medical school in the near future.

Jamil Hopkins is presently a Financial Advisor at Modern Woodmen of America in his hometown of Cary, NC. He may pursue graduate school soon.

Ashley Tucker is currently serving as an AmeriCorps VISTA member (domestic version of the Peace Corps) specializing in Community Economic Development. She plans to pursue a PhD degree in Community & Organizational Psychology.

WSSU Annual Scholarship Day

WSSU Scholarship Day began as a vision of Provost Brenda Allen about five years ago. She wanted to showcase WSSU's talented students and faculty, giving them a setting to display their research projects. During the 4th Annual Scholarship Day, work from 23 departments, including research by students, both undergraduate and graduate, as well as faculty across a wide range of disciplines was presented. The exhibitions originated in classrooms, laboratories and community settings. A plethora of the projects have been prepared for presentation at various conferences, such as the Annual Biomedical Research Conference for Minority Students (ABRCMS) across the country.

"Scholarship Day provides an opportunity to celebrate research on our campus and to recognize the scholars who produce the work," says Provost Allen. Scholarship Day is also a collaborative effort between the students and faculty. It is a vehicle for highlighting some of the wonderful work that is taking place at WSSU.



SCHOLAR PUBLICATIONS

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2. Xuehong Cao, Pingwen Xu, Mario G. Oyola, Yan Xia, Xiaofeng Yan, Kenji Saito, Fang Zou, Chunmei Wang, Yongjie Yang, **Antentor Hinton, Jr.**, Chunling Yan, Hongfang Ding, Liangru Zhu, Likai Yu, Bin Yang, Yuxin Feng, Deborah J. Clegg, Sohaib Khan, Richard DiMarchi, Shaila K. Mani, Qingchun Tong and Yong Xu L. "Estrogens stimulate serotonin neurons to inhibit binge-like eating in mice." *J Clin Invest* 2014 Aug 26. pii: 72716. doi:10.1172/JCI74726. [Epub ahead of print].
3. Huilian Bu, Bin Shu, Feng Gao, Cheng Liu, Xuehai Guan, Changbin Ke, Fei Cao, **Antentor Othrell Hinton, Jr.**, Hongbing Xiang, Hui Yang, Xuebi Tian, Yuke Tian. "Spinal IFN- γ -induced protein-10 (CXCL10) mediates metastatic breast cancer-induced bone pain by activation of microglia in rat models." *Breast Cancer Research and Treatment* 2014 Jan;143(2):255-63. doi: 10.1007/s10549-013-2807-4. [Epub 2013 Dec 13].
4. Changbin Ke, Caijuan Li, Xiaoxia Huang, Fei Cao, Dai Shi, Wensheng He, Huilian Bu, Feng Gao, Tiantian Cai, **Antentor Othrell Hinton Jr.**, Yuke Tian. (2013). "Protocadherin20 promotes excitatory synaptogenesis in dorsal horn and contributes to bone cancer pain." *Neuropharmacology* 2013 Dec;75:181-90. doi: 10.1016/j.neuropharm.2013.07.010. [Epub 2013 Aug 2].
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