In the past 12 months, the Biomedical Research Infrastructure Center (BRIC) scientists have been focusing on effects of certain compounds on isolated tissues in several biomedical systems for translational purposes. These organic compounds, synthesized by a scientist at the Center, are purported to have anti-hypertensive properties. A group of physiologists began testing some of these synthetic compounds on blood vessels for its potential effects on adrenergic contractions that mimics the effect of cocaine. The compounds inhibited contraction in mesenteric arteries with varied efficacy suggesting that it may counteract some of the cardio-toxic effects of cocaine intoxications. This was done to tease out the probable anti-hypertensive properties and other possible benefits of the compounds as we move from the basic science research toward translational research. BRIC’s effort to enhance student training and to provide access to graduate or professional fields in biosciences starting from middle school age to graduate or professional level led us to a partnership with the Wiley Middle School in Winston-Salem. We began the Winston-Salem State University-Wiley Middle School Science Technology Engineering Arts and Mathematics (W²=STEAM) Partnership in January 2015. The premise was to foster interactions with the community and educate the area middle school students in STEM. Each month the students visited the WSSU campus and participated in a STEAM training activity. We recognize the transitioning of K-12 students into a STEM field at the baccalaureate level. This led the Center to compete for a 5-year award of $2.3M from the NIH in May 2015 to support the WSSU Research Initiative for Scientific Enhancement (RISE) training program. The program is to develop an educational pipeline from lower to upper class levels of students, centered on a four-stage training model that aims to increase the pool of underrepresented students who gain admission into graduate and professional programs. The RISE program, along with the W²=STEAM partnership and the existing MARC U*STAR program provides our faculty the opportunity to contribute to the knowledge base of WSSU students in STEM. The MARC U*STAR and RISE programs primarily provide support for academic success and career exploration of WSSU students. Through these programs, about 70% of the past participants matriculated into graduate or professional schools leading to M.S., M.A., PhD, PharmD, DDS, or MD degrees. Many others are either in the pipeline or work in STEM field. BRIC continues to enjoy a rich and successful heritage of fostering research.
The Minority Biomedical Research Support - Research Initiative for Scientific Enhancement (MBRS-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 the focus on increasing the number of students entering and completing graduate education in the biomedical sciences. The program at WSSU is in its second 5-year cycle and it is expected to enroll 30 students per year from the freshman and sophomore classes. 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, 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 a four-stage training model that will enhance the pool of qualified and interested students who will pursue advanced preparation as WSSU RISE Fellows. 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.
MEET THE 2015-2016 MARC U*STAR STUDENTS

TARI COX is a Senior Psychology major with a Deaf Studies minor.

BEVERLY DOSSO is a Junior majoring in Chemistry.

AMARI LEWIS is a Senior majoring in Computer Science.

SHAINA YATES is a Senior Clinical Laboratory Science major.

LANAZHA BELFIELD is a Junior Biology major with a Chemistry and Physics minor.

ERIC PRIDGEN, a Junior, is a Mathematics major.

JASON RILEY is a Senior majoring in Social Work.

KIANA RUSHDAN is a Biology major and is a Junior.

CHRISTOPHER SHEW is a Biology major with a Chemistry minor. Mr. Shew is a Junior.
Congratulations

- MARC Scholar, Olivia Franklin, was accepted into the Anthropology Master's program at Idaho State. She begins in August 2015. We wish her the best in graduate school!
- MARC Scholar, Jessica Clark, was accepted into the M.S. in Medical Sciences program at the University of South Florida Morsani College of Medicine for the fall of 2015. Congratulations, Jessica!
- MARC Scholar, Amari Lewis, attended the 2015 Collaborative Data Visualization Summer Research Program at Clemson University.
- MARC Scholar, Shania Yates, participated in the 2015 Excellence in Cardiovascular Sciences Research Program at Wake Forest University School of Medicine.
- Alvita Byers is the recipient of a 2015 Chancellor’s Achievement Award for outstanding service to the BRIC and University. Way to go, Alvita!
- Anne Jeffers is the recipient of a 2015 Chancellor's Achievement Award for exemplary service to the BRIC and University. Congratulations, Anne!

SPRING 2015 SEMINAR SERIES

1/15/15 - Opening Meeting of Spring Semester, Dr. Azeez Aileru, the Director of BRIC welcomed the MARC Scholars and Affiliates for the spring semester.

1/22/15 - How to Create and Manage a Budget Workshop. Ms. Anne Jeffers, BRIC Coordinator, conducted a budget workshop with the students. The students learned how to create a budget for their monthly expenses and how to manage their credit.

1/29/15 - How to Make a Scientific Poster Workshop. Ms. Anne Jeffers provided the students with information about creating a scientific poster. They discussed how to use PowerPoint to create a poster, the components of a poster, and how to make graphs and figures for a poster.

2/5/15 - Interviewing for Success and Appropriate Professional Dress Workshop. The students participated in a workshop with Ms. Anne Jeffers that covered topics, such as dressing for an interview, business casual dress, interview tips for graduate school, preparing for job interviews, and proper follow up to an interview.

2/12/15 - Dr. Ronny Bell, Wake Forest University School of Medicine, Maya Angelou Center for Health Disparities spoke to the students about the new master of science in neuroscience program offered at Wake Forest University Health Sciences. Dr. Bell also had advice for the students as they progress through their graduate education and research careers.

2/19/15 - Dr. Shannon Jones, UNC Chapel Hill, SPIRE Scholar, Microbiology and Immunology Department. Dr. Jones is a WSSU Alumna. She provided the students with insight to her experience as an undergraduate student transitioning to a graduate student and, ultimately, to a post-doc and professor. Additionally, she presented data from her research on autoimmune responses in burn victims.

2/26/15 - Dr. Bill Conner, Wake Forest University, Biology Department, gave an interactive and engaging talk to the students on his research with bat and moth echolocation. He presented data and videos from his animal studies examining communication with sonar. In collaboration with Dr. Paul Pauca in the Computer Science department, Dr. Conner developed a sonar device to assist the visually impaired. The MARC students were able to test the innovative device during Dr. Conner’s talk.

3/2/15 - Ms. Ashlee Clark, WSSU Alumna - RISE Scholar and UNTRAC, spoke to the students about her experience as a WSSU student and gave advice she thought would help the students. She also talked about the research she completed while pursuing her MS in biomedical sciences and neuroscience as Wake Forest.


3/20/15 - Dr. Shannon Jones, UNC Chapel Hill, SPIRE Scholar, Microbiology and Immunology Department. Dr. Jones is a WSSU Alumna. She provided the students with insight to her experience as an undergraduate student transitioning to a graduate student and, ultimately, to a post-doc and professor. Additionally, she presented data from her research on autoimmune responses in burn victims.


4/9/15 - Student Poster Presentations for University Scholarship Day. The MARC Scholars and Affiliates presented their research in preparation for the University Scholarship Day the following week.

4/16/15 - Dr. Sherri Lawson, Wake Forest University, Anthropology Department spoke to the students about her experiences from being an undergraduate student to where she is in her career currently. Dr. Lawson also spoke about her research on urban housing and with the national park service.

4/23/15 - Closing Ceremony for the academic year. MARC Scholars and Affiliates and their Mentors celebrated the end of the academic year and honored the graduating seniors.
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 work” says Provost Allen. It is also a collaborative effort between the students and faculty. Scholarship Day is a vehicle for highlighting some of the wonderful work that is taking place at WSSU.

Olivia Franklin, Graduate May 2015. The Endothelin System in Vasculature of m(Ren2) 27 Hypertensive Rats, Mentor Dr. Victor M. Pulgar

Amari Lewis, MARC Scholar Fall 2015. Analyzing the Effects of CB¹ on Chinese Hamster Ovary Mutant Cell, Mentor Dr. Allyn Howlett

Tenise Holloway, Graduate May 2015. Analyzing the Ideal Conditions for Physical Activity in Type II Diabetes, Mentor Dr. Tennille D. Presley

Shaina Yates, MARC Affiliate Fall 2014. Butyric Acid and Insulin Resistance in Hepatocytes, Mentor Dr. Lisa Maness

Jessica Clark, Graduate May 2015. Novel Approaches to Resistance-free Anti-Bacterial Drugs by Targeting Quorum Sensing and Biofilm Formation, Mentor Dr. S.T. Dance-Barnes

COMMUNITY ENGAGEMENT

Winston-Salem State University and Wiley Middle School began their W²-STEAM Partnership in January 2015. Thirty 7th and 8th grade students from Wiley Middle School along with their science teachers and the Wiley STEAM Coordinator have participated in the program. Each month the Wiley students came to the WSSU campus where they participated in a STEAM event except for the month of February which was cancelled due to snow.

JANUARY

January's activities took place in Digg’s Gallery where the students discovered math through art. They toured the art exhibit “Vibrations, Frequency, and the Phenomenon of Relationship Works” with the artist himself, Vandorn Hinnat, and the Director of Digg’s Gallery, Ms. Endia Beal. The students constructed their own art piece called a mandala with elements from nature including fresh vegetables and harvested nuts and seeds. They learned about symmetry and mathematical concepts presented by Dr. Frank Ingram, Chair of the WSSU Math Department, which they then implemented when making their mandala.

MARCH

March incorporated science and technology in “CSI, the Brain, and Manufacturing of Nylon from Polymers” activity with numerous faculty members from the Biological Sciences, including Drs. Aileru, Bhat, Keith, Kiren, Logan, Overholt, and Thompson. Students collected their own DNA from their cheeks, worked in the W²-STEAM crime scene laboratory to determine who committed a crime using a technique known as gel electrophoresis, made nylon which they got to take home, and dissected a sheep brain.

APRIL

The School of Health Sciences brought the mobile clinic for the Wiley students where they saw how blood glucose is measured in a patient, calculated their own Body Mass Index (BMI), and took their blood pressure measurements with Drs. Duren-Winfield and Harwell and Mr. Aaron Jackson. The students also tested their own agility and fitness with a jump test and push-up endurance test with Dr. Markert.
MARC & MARC AFFILIATE GRADUATES:

Ramane Alexander is in the fourth 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.

Antonor Hinton, Jr. is a fifth 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 is in his fourth 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 fourth 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.

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

Jasmine Richardson completed her PharmD program at Campbell University College of Pharmacy & Health Sciences in May 2015.

Samantha-Rae Dickenson is 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 third year of the MA program in Community Social Psychology at the University of Massachusetts Lowell.

Ashley Moore is completing 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 second 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 third 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.

Jatyra Rivers is working on her Master of Science degree in Public Health at UNC-Charlotte which she will complete in May 2015.

Dominique Battle is currently working at the Greensboro Housing Coalition focusing on Homelessness Prevention and Healthy Homes.

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 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 first year graduate student pursuing his Ph.D. at North Carolina Central University.

Eve Savage is currently working 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 matriculates into Campbell University’s graduate program in the fall of 2015.

Chinamene Okoro completed his BS degree in Exercise Science in December 2015.

Keren (Pereda) Ferris is the Nutrition Services Coordinator at the Second Harvest Food Bank of Northwest North Carolina.

Jessica Clark completed her BS degree in Biology in May 2015. She will matriculate in the M.S. program in Medical Sciences at the University of South Florida Morsani College of Medicine in the fall.

Tenise Holloway completed her BS degree in Mathematics in May 2015. She has applied to master's programs in biostatistics.

Olivia Franklin completed her BS degree in Biology in May 2015 and has been accepted to Idaho State University’s Master of Science Program in Anthropology.

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 fourth 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 Biomedical Sciences and 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 May 2014.

Ejiphogene Arahgba is in 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.

Ebene Evans is a first year medical student at East Carolina University Brody School of Medicine. She graduated in May 2014 with a BS degree, summa cum laude, in Biology.

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 Guillaume graduated in May 2014 with a BS degree, magna cum laude, in Chemistry. He plans to attend medical school in the Fall of 2016.

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 Ameri-Corps VISTA member (domestic version of the Peace Corps) specializing in Community Economic Development. She plans to pursue a PhD degree in Community & Organizational Psychology.


