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/biopsychology/bioinformatics workshops, 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.

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RISE scholars receive extensive hands-on research training in the FSU-RISE Program in preparation for competitive entry into graduate school. Scholars receive basic hands-on research training in the biotechniques/biopsychology workshops prior to participation in extramural research experiences each summer. After completion of an extramural summer research internship, scholars are expected to present their research at the Annual Biomedical Research Conference for Minority Students (ABRCMS) and at least two regional and local symposia during the academic year. At least one FSU-RISE scholar has been recognized as a winner of the oral and poster presentation competition at ABRCMS each year since the inception of the FSU-RISE program in 2001. RISE scholars have also won oral and poster presentations at other research conferences across the country. The following RISE scholars have been accepted into extramural research internships for the Summer of 2009: Justin Evans was accepted to a summer research program at the Signal Transduction Laboratory at Methodist Research Institute in Indianapolis, IN.; DeVoshia Mason was accepted to a Summer Research Program at North Carolina (NC) State University in Raleigh, NC; Al Lucas was accepted to a psychology research internship at East Carolina University in Greenville, NC; Chidumbem Ike was accepted to a Summer Undergraduate Research Program at the Medical University of South Carolina in Charleston, SC; Danielle Fortune was accepted to the Summer Undergraduate Research Program at The Ohio State University in Columbus, Ohio; Ronald Williams was accepted to a summer research program in neurobiology at the University of Nebraska Lincoln; Melanie Boney was accepted to the Summer Undergraduate Research Program at Medical University of South Carolina in Charleston, SC; Greximar Mercado was accepted to a summer research program at Miami University; Karlten Austin was accepted to a summer research program at The Ohio State University in Columbus, Ohio; Candy Graves was accepted to a summer research program at Elizabeth City State University in Elizabeth City, NC; and Hubby Buehler was accepted into the research laboratory of Dr. Sherrice Allen at FSU for his summer research internship. Several RISE scholars have ~continued on next page~
been accepted into Ph.D. Programs for the fall 2009. Justin Graham was accepted into a Ph.D. program at the University of Arkansas School of Medical Sciences in Little Rock, Arkansas; Jasmine Newman was accepted into Ph.D. programs at Indiana University and Vanderbilt University in Nashville, Tennessee. Jasmine plans to attend Indiana University. Former Scholar Saed Aborkor was accepted into a Ph.D. Program at Case Western Reserve University in Cleveland, Ohio. He recently completed a post baccalaureate program at the University of Chicago. Yvonne Rosario was accepted into a Ph.D. Program at Morehouse School of Medicine in Atlanta, Georgia; and Chelsea Swepson was accepted into a Ph.D. Program at Meharry Medical College in Nashville, Tennessee. Chelsea recently completed a Masters Degree in biology at North Carolina Agriculture and Technical State University. Lorra Moses was accepted into the Clinical Research Masters Program at Campbell University School of Pharmacy. Nicole Joyner was accepted into a Masters Program at the University of North Carolina Greensboro.

FSU-RISE Scholars take the lead at the 2009 Mathematics and Science Undergraduate Research Symposium (MSURS)

The 2009 Mathematics & Science Undergraduate Research Symposium was held at Fayetteville State University on April 24th and 25th. The event was co-sponsored by six FSU undergraduate STEM enrichment programs including Center for Promoting Science, Technology, Engineering, and Mathematics (STEM) Education and Research (CPSER); Fayetteville State University Research Initiative for Scientific Enhancement (FSU-RISE) program; North Carolina-Louis Stokes Alliance for Minority Participation (NC-LSAMP) program; Opportunities for Talent Expansion in Interdisciplinary Education for Minorities and Women in Undergraduate Math & Science (OpTIMUM); FSU Innovative Curriculum Approach for Mathematics and Science (FICAMS); and University and Community Alliance in Mathematics and Computer Sciences (UCAMS). The event marked the culmination of research activities for the 2008-09 academic year. The theme of the event was entitled, "Strengthening Undergraduate Research through STEM Enrichment Programs". The activities of the symposium were comprised of the Keynote Address by Christopher Jones, Assistant Dean for Graduate Education at the Massachusetts Institute of Technology (MIT); faculty and students research presentations; three Graduate School Exhibitions including Fayetteville State University, North Carolina A&T State University, and Wake Forest University; and the high school and college Science Quiz Bowl Competition. The symposium was highlighted by undergraduate oral and poster presentations in math and science. Approximately 44 faculty and students made oral and poster presentations, 27 of those undergraduate students participated in the oral and poster competition. Ryan Caple and Justin Graham, FSU-RISE scholars, received awards for the top presentations in the oral competition. Ryan Caple, a senior biology major, was awarded first prize of $150 for his oral presentation entitled, "Antioxidant Activity of Epicatechin-Rich Berries". Dr. Shubo Han served as his research mentor. Justin Evans, a sophomore biology major, was awarded second prize of $100 for his oral presentation entitled, "Prostaglandin E2 Activates Rap-1 and the Extracellular Signal Regulated Kinase (ERK) in Human En-

FSU-RISE Co-Sponsors Grant Writing Workshop

The FSU-RISE program co-sponsored a grant writing workshop in collaboration with the FSU Office of Sponsored Research and Programs on Dec. 17-19, 2008 as part of a faculty development series. The goal of the grant writing workshop is to increase the number of submission and funding of high-quality proposals at the university. Twenty-three faculty and staff participated in the event. Participants were expected to submit proposals to a funding agency within six months of the workshop. Sponsored Research and Programs reports that to date seven participants have been submitted proposals for funding of which two have received awards and funding for five are pending. The workshop was conducted by the Grant Training Center of Arlington, VA.
dothelial Cells.” Dr. Maria Rizzo, signal Transduction Laboratory at the Methodist Research Institute in Indianapolis, Indiana served as his research mentor during the summer 2008. In addition, one high school team and four college teams competed in the Science Quiz Bowl Competition on Saturday, April 25, 2009. The FSU-RISE team won both the high school and college competitions. Justin Evans, Ronald Williams, Branden Kizer and Sidney Lanier were members of the FSU-RISE Quiz Bowl Team. Other student winners included Mary Brigman, FICAMS scholar, who won third prize of first prize of $100 in poster competition; Jessica Adams-Alexander, FICAMS scholar, who won second prize of $50 in the poster competition; Brittney Graham, FICAMS scholar, who won third prize of $25 in the poster competition; and Sean Mobley, NC-LSAMP scholar, who won third prize of $50 in the oral competition. Reid Ross Classical High School received a plaque for first place in the high school competition of the Science Quiz Bowl. The high school team consisted on April Richard, Janecia Lee, Kianna Winstead and Freddie Edwards. The team was sponsored by Ms. Wendy Buehrer, a biology teacher at Reid Ross Classical School.

Did You Know...
⇒ Beginning Fall 2009 the MBRS Core Lab will be located in LSA 246?
⇒ Training sessions for the new autoclave are now available?

Contact FSU-RISE at x1081 for more information.

The Fayetteville State University Research Initiative for Scientific Enhancement (FSU-RISE) Program sponsored a trip to the Medical University of South Carolina in Charleston, South Carolina on February 26 & 27 to attend the Dr. Ernest Everett Just (E.E. Just) Science Day. Thirty-eight FSU students, including 16 FSU-RISE Scholars and Dr. Raynor, attended the event. The E. E. Just Symposium is held every year during Black Heritage month in February in celebration of the birth and extraordinary legacy of Dr. Just in the promotion of scientific research. Born in Charleston, SC and a founding member of Omega Psi Phi Fraternity, Inc., Dr. Just was known in the scientific community for his scientific publications and his work as an outstanding African American biologist of the twentieth century. A highlight of the Science Day event was the opportunity for students to network with students from other colleges and tour six colleges at MUSC including medicine, dentistry, pharmacy, nursing, health professions and graduate studies. Several RISE scholars have made applications to the Summer Undergraduate Research Program sponsored by MUSC. Jessica Ross, a former FSU-RISE scholar, is currently enrolled at MUSC in a Ph.D. program.
North Carolina A&T State University hosted the 11th Life & Physical Sciences Research Symposium on Friday, February 13, 2009. The theme of the program was “Explore, Discover, Become: The Next Generation of Nobel Laureates.” Justin Graham, a senior biology major and Fayetteville State University Research Initiative for Scientific Enhancement (FSU-RISE) scholar, was one of six undergraduates to receive prize awards for winning the poster presentation competition during the symposium. Justin presented his intramural research entitled, “Voltammetric Behavior of Flavonoid Antioxidants,” which was directed by Dr. Shubo Han, Assistant Professor of Chemistry. Dr. Oliver Smithies, 2007 Nobel Laureate and UNC Chapel Hill Professor of Biology, was the keynote speaker for the symposium. Dr. Smithies and his colleagues Mario Capecchi and Martin Evans were awarded the 2007 Nobel Prize for their groundbreaking discoveries of the principles for introducing specific gene modifications in mice by the use of embryonic stem cells. The goal of the symposium was to provide a venue for students and faculty from across disciplines at the university and at various institutions throughout the state to present their research in a public forum. The objectives of the symposium were 1) to provide a forum for networking and scientific exchange between faculty scientists and students with researchers on and off the campus; 2) to profile the achievements of students and to inspire them to pursue biomedical research and scientific research careers; 3) to inform the community about health disparity issues; and 4) to provide an opportunity for students to interact with a Nobel Laureate in science. FSU-RISE scholars Shalisa Irby, Karlten Austin, Hubby Buehler, Chidubem Ike, Justin Evans, Ryan Caple along with Dr. Raynor, FSU-RISE Director, also attended the event.

Eight Fayetteville State University (FSU) students participated in a competition of oral and poster research presentations during the Annual Biomedical Research Conference for Minority Students (ABRCMS) on November 5-8, 2008 in Orlando, Florida. Yatzka Hoyos, a senior chemistry major who works the laboratory of Dr. Cevdet Akbay; and Justin Evans, a sophomore Research Initiative for Scientific Enhancement (RISE) scholar, received awards in their perspective research categories. This marks the seventh consecutive year the FSU-RISE program had at least one winner in the annual competition. Yatzka’s presentation entitled, “Development of a Novel Method for Rapid Determination of Partition Coefficients between n-Octanol and Water Using Micellar Electrokinetic Chromatography” and Justin’s presentation entitled, “Prostaglandin E2 Activates Rap-1 and the Extracellular Signal Regulated Kinase (ERK) in Human Endothelial Cells” were among over 1,400 presentations in the competition. In October, Justin also won third prize with the same presentation at the LSMAMP at Jackson State University in Jackson, Mississippi. Justin conducted his research with mentor Dr. Maria Teresa Rizzo during the summer of 2008 at the Signal Transduction Laboratory at the Methodist Research Institute in Indianapolis, IN. The goal of ABRCMS is to encourage underrepresented minority students across the United States to pursue advanced training in the biomedical and behavioral sciences and provide faculty mentors and advisors with resources for facilitating student success. The conference offered a host of inspirational speakers, scientific sessions, professional development workshops, exhibits, and student oral and poster presentations. With over 285 U.S. Colleges and Universities participating in the largest minority professional conference, ABRCMS reported this year the highest number of program attendees, including 1,845 undergraduate, post-baccalaureate, graduate and post-doctorate students; 425 Exhibitors; and 540 Program Directors, faculty and other administrators. A total of twenty-three FSU faculty, staff and students attended the 2008 conference including, seventeen FSU-RISE scholars; one senior chemistry major; three FSU faculty, including Dr. Sherrice Allen, ABRCMS Steering Committee member and competition judge; Dr. Subir Nagdas, competition judge; Dr. James E. Raynor, Jr., FSU-RISE Program Director and competition judge; and Stephanie Means, FSU-RISE Program Coordinator.
Visit NC State and Duke University Day

Tyisha Adderly, Danielle Fortune, Tiara Long, and Ashley Higgs are four sophomore Fayetteville State University Research Initiative for Scientific Enhancement (FSU-RISE) scholars who attended the Annual Visit North Carolina (NC) State and Duke University Day co-sponsored by both Graduate Schools on October 14-16, 2008. The two-day event was supported through the Alliances for Graduate Education and the Professoriate (AGEP) grant funded by the National Science Foundation (NSF). The goal of the Visit NC State and Duke University Day was to increase student awareness of graduate programs, admissions requirements, and summer research opportunities offered by both campuses. The event was attended by 45 students with an average 3.55 GPA from over thirty institutions from across the country. Additionally, scholars were given the opportunity to tour the research facility and talk with graduate faculty and students from both campuses. A major feature of Visit Day was the student forum where participants talked with a panel of current minority graduate students regarding their experiences in graduate school. The nine-member student panel included two former FSU students, Michael Smith, a first-year NC State graduate student in the Department of Biochemistry; and Charles Lawrence, a first-year NC State graduate student in the Department of Forestry and Environmental Resources. As an incentive for students to attend NC State or Duke University for graduate schools, participants were given early applications for summer programs and a fee waiver for their applications for admission to graduate school. The FSU-RISE program is committed to exposing FSU students to opportunities such as Visit NC State and Duke University Day to increase the number of FSU minority students completing Ph.D. degrees in the biomedical and behavioral science fields.

FSU-RISE Scholar Wins Third Place in LSMAMP National Symposium Oral Competition in Mississippi

Six Fayetteville State University Research Initiative for Scientific Enhancement (FSU-RISE) Scholars attended the Fifth Annual Louis Stokes Mississippi Alliance for Minority Participation (LSMAMP) National Research Symposium held October 6 & 7, 2008 at Jackson State University, Jackson, Mississippi. The purpose of the event was to exhibit research projects conducted by graduate and undergraduate students across the country. With over ninety students participating in the poster and oral competition, Justin Evans received the third place award of $100 cash prize in the undergraduate oral competition category. Justin is a sophomore biology major and first-year FSU-RISE Scholar. His research entitled, “Prostaglandin

E2 Activates Rap-1 and the Extracellular Signal Regulated Kinase (ERK) in Human Endothelial Cells” was conducted at the Signal Transduction Laboratory, Methodist Research Institute in Indianapolis, IN. Oral and poster presentations were also made by David Ahlstrom, Ryan Caple, Karnten Austin, Chidubem Ike, and Hubby Buehler, all of whom are scholars in the FSU-RISE program. RISE scholars were also exposed to professional development workshops, and a plethora of speakers and recruiters who provided invaluable information of summer research opportunities and steps for getting accepted into high-quality doctoral programs. FSU-RISE is a federally-funded program with the overarching goal of increasing the number of FSU students completing Ph.Ds in biomedical and behavioral science fields. The RISE program provides professional development workshops, science enrichment, academic support, and intramural/extramural research opportunities to help scholars become more attractive candidates for advanced degrees in biomedical and behavioral science fields.
FSU-RISE Scholars Attend Annual NC-OPT ED Alliance Day

Twenty-three FSU scholars from the Fayetteville State University attended the 7th Annual North Carolina Opportunities for Education (NC-OPT ED) Alliance Day at the Greensboro Coliseum in Greensboro, N.C. on September 26, 2008. These scholars represent ten students from the FSU Research Initiative for Scientific Enhancement (FSU-RISE), and thirteen students from the North Carolina Louis Stokes Alliance for Minority Participation (NC-LSAMP) and FSU Innovative Curriculum Approach for Mathematics and Science (FICAMS) programs. The theme of the event was “Science, Technology, Engineering, & Mathematics: Inspiring Greatness for the 21st Century.” The conference united nearly 1000 minority middle school students through undergraduate students across North Carolina to encourage them to pursue degrees in science, technology, engineering, mathematics, social, behavioral and economic sciences fields. RISE scholars attended the one-day event, co-sponsored by North Carolina Agriculture & Technical (NC A&T) State University, North Carolina State University (NCSU), and University of North Carolina at Chapel Hill (UNCCH), to help them become more competitive applicants for graduate schools. Three RISE scholars, Jasmine Newman, Danielle Fortune, and David Ahlstrom, were among several FSU students who made poster presentations on their summer scientific research projects during the conference. Scholars also had an opportunity to attend workshops on networking, computational sciences, and how to fund and become more competitive for graduate school education. In addition, scholars talked with recruiters from various academic institutions during the conference.

FSU-RISE Pre-Freshman Summer Enrichment Workshop (PFSEW) 2008

Thirteen Fayetteville State University (FSU) incoming freshmen for the fall semester participated in the 2008 Pre-Freshman Summer Enrichment Workshop (PFSEW), sponsored by the FSU Research Initiative for Scientific Enhancement (FSU-RISE) program. The two-fold goal of the five-week program (July 1 - August 1) was to enhance the preparation of Pre-RISE Scholars for college biology and math courses; and to stimulate their interests in pursuing research fields in biology, chemistry or psychology. Through joint participation with RISE and the FSU CHEER program, Pre-RISE scholars earned academic credit for Introduction to College Algebra (MATH 121), Physical Education (PEDU 140), while receiving an intensive preparation for fall enrollment in the Principles of Biology (BIOL 150) course through a "Topics in Biology" online mini-course. Results from pre- and post-math placement exams were used to personalize the academic preparation and advisement of pre-RISE Scholars. Academic support was provided for all coursework. Scholars received exciting and meaningful laboratory experiences through hands-on, hypothesis-driven manipulation of biomolecules during the biotechniques workshop. Additionally, scholars participated in a wide-range of math and science enrichment activities to enhance their reading, writing and problem-solving skills. The workshop culminated with math and science presentations; and recognition of scholars for their outstanding achievements at the closing and awards banquet on July 31, 2008.

2009-10 FSU-RISE Honors and Awards

OUTSTANDING CONFERENCE PRESENTATIONS
1st Place - Justin Evans
For outstanding oral and poster presentations
2nd Place - Ryan Caple
For outstanding oral presentation
3rd Place - Justin Graham
For outstanding poster presentation

ACADEMIC EXCELLENCE
Hubby Buehler
For earning the highest GPA of 3.955 in the FSU-RISE program

FSU-RISE DIRECTOR’S AWARD
Ronald Williams
For exemplifying outstanding attitude, motivation, and high spirit

SCHOLAR OF THE YEAR
Danielle Fortune
For having outstanding scholarship, dedication, and program participation
What is Biomedical and Behavioral Research?

Biomedical research is the exploration of processes that govern the underlying functioning of molecules, cells, and organisms in health and diseases such as diabetes, hypertension, Parkinson’s, etc. Behavioral research involves understanding the brain structure/function and discovering processes underlying behavior and cognition to develop interventions to reduce or prevent public health treats such as obesity, cancer, smoking, and the spread of HIV/AIDS. Biomedical/behavioral scientists bridge the gap between basic sciences and medicine. The Ph.D. degree is the gateway to a career in biomedical/behavioral research.

Why Pursue a Ph.D. in biomedical/behavioral sciences?

- Think outside the box
- Like hands-on experiences
- Want to understand how/why things work the way they do
- Get excited by discovering new things
- Look at nature and see previously unrecognized patterns
- Appreciate the inherent beauty of the natural world
- Enjoy the freedom to pursue interesting questions
- Have the persistence to see a project through from small beginnings to great discoveries
- Want to improve the human condition through their work
- See the power of biomedical/behavioral research to change the world
- Become team members and leaders
- Become teachers and mentors

How does FSU-RISE prepare you for Ph.Ds in biomedical/behavioral sciences?
Why pursue a Ph.D.? Why join the FSU-RISE program?
FSU-RISE can provide you the hands-on research training and experience for competitive entry into the top graduate schools across the United States.

Benefits of Participation in FSU-RISE:
- Participate in hands-on Biotechniques/ Biopsychology workshops
- Participate in Enrichment Seminars
- Earn credit for Scientific Communications and Interdisciplinary Research elective courses
- Attend local and national research symposia and conferences
- Participate in FSU-RISE Colloquia
- Participate in extramural and intramural research
- Network with local and national academic professionals
- Receive specialized tutoring in coursework to improve GPA and class performance
- Participate in full Graduate Record Examination (GRE) preparatory workshop
- Participate in the Grant Writing Workshop
- Receive pay ($10-12/hour up to 20 hours per week) for participation in RISE activities
- Participate in career field trips

For more information on the FSU-RISE program, contact Stephanie Means, FSU-RISE Coordinator at (910) 672-1081 or Dr. James Raynor, FSU-RISE Director at (910) 672-1023.

For Applications, visit us on the Web!
http://www.uncfsu.edu/fsurise/