

*“PROMOTING RESEARCH AND EDUCATION
IN SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM)”*

2007 CLOSING CEREMONY

RESEARCH EXPERIENCES FOR UNDERGRADUATES IN BIOTECHNOLOGY

(MAY 21 - JULY 23, 2007) &

SUMMER RESEARCH APPRENTICESHIP PROGRAM

(JUNE 11- JULY, 2007)

CENTER FOR BIOTECHNOLOGY

FORT VALLEY STATE UNIVERSITY

A UNIT OF THE UNIVERSITY SYSTEM OF GEORGIA

MONDAY, JULY 23, 2007

C. W. PETTIGREW FARM AND COMMUNITY LIFE CENTER



(Left to Right) Front Row: Jaleese Oglesby, Horecia Williams, Olen Harris, Monica Sullivan, Hakeem Broomfield and Brandon Crumsey. Back Row: Lauren Byrd, Kacie McInvale, Quintina Rogers, Livia Rivera-Pagan, Stephen Brown, Mario Turner, Terrica Moris, Brittany Rucker, Tameka Howard, Brittany Turner, Octavia Holloway, Beruk Lemma, Shateria Fordham, Kaisa Muller, Eric Coleman and Ulysses Pickard.



*SPONSORED BY
THE NATIONAL SCIENCE FOUNDATION
(HBCU-UP AND REU-SITE PROGRAM)
AND
FORT VALLEY STATE UNIVERSITY*



A Message from the President

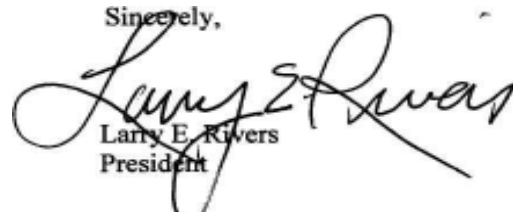


To the Outstanding Student Participants in SRAP and REU:

Congratulations! You have completed with flying colors the Summer Research Apprenticeship Program (SRAP) and the Research Experiences for Undergraduates (REU) in Biotechnology Program at The Fort Valley State University. Take pride, as we do, in your accomplishments! Your record of success as you have pursued this exciting opportunity well illustrates your serious attitudes toward education, your ability to carry through on your commitments, and the bright prospects that await you in the future.

Talk about hands-on experiences! You have gained an intimate look at biotechnology and have enjoyed access to some of the most outstanding members of the sciences faculties within the University System of Georgia. The undergraduates in the REU program have every right to feel that your decision to choose FVSU as your university has been validated. For those of you still in high school, I want you to know that we at FVSU have been delighted to meet some of the brightest rising stars that education has to offer. A win-win situation, indeed. Now, let me just ask that you give our university—The Fort Valley State University—the highest consideration when choosing your undergraduate institution. Great times and experiences await students here at FVSU. As I love to tell everyone, “A new day has dawned in The Valley!”

Please never doubt that we here at FVSU are proud of your determination to exercise what we consider to be your right to an outstanding education. We here in “Wildcat Country” stand ready to assist you in any way that we can as you move forward educationally and personally. Let us celebrate together this occasion and your accomplishments. We eagerly anticipate viewing “up close” the fruits of your continued efforts as you pursue academic excellence!

Sincerely,

Larry E. Rivers
President

Our Keynote Speaker



Dr. Camille A. McKayle

Program Director, HBCU-UP, National Science Foundation

Camille A. McKayle received her B.S. in mathematics from Bates College, Lewiston, Maine, in 1985, and went on to receive her Ph.D., also in mathematics, from Lehigh University, in Bethlehem, Pa., in 1993. She taught for three years at Lafayette College, Easton, Pa, before moving to the Virgin Islands in 1996, to be an assistant professor, and then associate professor of mathematics at the University of the Virgin Islands.

In addition to her classroom activities, Dr. McKayle has been quite active in a variety of outreach activities aimed at increasing interest in science and mathematics for students in grades 3 through 12. Through these activities, she tries to relay her love and enjoyment of mathematics to middle and high school students. She has also participated as an organizer and presenter in workshops for mathematics teachers in the Virgin Islands.

Dr. McKayle served as co-principal investigator and project director for the NSF Historically Black College and University Undergraduate Program (HBCU-UP) project at the University of the Virgin Islands (UVI), as well as a variety of other grant projects at the university that aimed to strengthen the quality of the preparation that UVI students receive in science and mathematics, with an overall goal of increasing the number of students that choose graduate study in a science, technology, engineering or mathematics discipline.

Since Fall 2005, Dr. McKayle has been at the National Science Foundation, in the role of program officer for the Historically Black Colleges and Universities Undergraduate Program in the Division of Human Resource Development, in the Directorate for Education and Human Resources.

Monday, July 23, 2007
Auditorium, C.W. Pettigrew Farm and Life Center

PROGRAM

Session I

Presiding: **Ms. Betsy Ampofo**, 2007 FVSU Plant Science-Biotech Graduate (Accepted for Ph.D. Program in Plant Genomics at Cornell University)

8:00 a.m. Welcome and Program Purpose
Dr. Mark Latimore Jr.
Interim Dean, College of Agriculture, Home Economics and Allied Programs

8:10 a.m. Recognition of Parents and Guests

8:20 - 10:30 a.m. Presentations by SRAP Participants

8:20 a.m. **Brandon Crumsey** and **Hakeem Broomfield**, Incoming Freshmen, Fort Valley State University, Fort Valley, Ga.
Vermiculture: Worms Can Recycle with Garbage
Mentor: Dr. Mark Latimore

8:30 a.m. **Beruk Lemma**, Incoming Freshman, Fort Valley State University
The Isolation and Identification of Mitochondria, Chloroplast and Genomic DNA from *Pisum sativum* and *Lathyrus*
Mentor: Prof. Bryan Mitchell

8:40 a.m. **Brittany Rucker**, Incoming Freshman, Fort Valley State University
Use of Polymerase Chain Reaction (PCR) in DNA Fingerprinting for Crime Scene Investigation
Mentors: Ms. Kaye Knowles and Dr. Sarwan Dhir

8:50 a.m. **Brittany Turner**, Incoming Freshman, Fort Valley State University
Correlation Analysis of Somatic Cell Counts & Bacterial Cell Counts in Relationship to Mastitis
Mentor: Dr. Young Park

9:00 a.m. **Erik Coleman**, Incoming Freshman, Fort Valley State University
The Control of *E. coli* on Beef Samples with an Electric Current
Mentors: Dr. Ajit Mahapatra and Dr. Chau Nguyen

9:10 a.m. **Horecia Williams**, Incoming Freshman, Fort Valley State University
Distribution of Fatty Acids on the Sites of Fat Deposits in the Meat Goats
Mentors: Dr. Govind Kannan and Dr. Jung Lee

9:20 a.m. **Jaleese Oglesby**, Senior, Peach County High School, Fort Valley, Ga.
Review of Socio-Economics of Middle Georgia
Mentors: Dr. Mohammed Ibrahim and Dr. Xuanli Liu

9:30 a.m. **Monica Sullivan**, Incoming Freshman, Fort Valley State University
Breeding and Management of Japanese Quail
Mentor: Dr. Kashmiri L. Arora



- 9:40 a.m. **Mario Turner**, Incoming Freshman, Fort Valley State University
Effect of Egg Weight on Chick Weight
Mentor: Dr. Kashmiri L. Arora and Dr. Bipul Biswas
- 9:50 a.m. **Octavia Holloway**, Incoming Freshman, Fort Valley State University
Does the Mathematical Background of Students Have Any Effect on their Performance in College Level Mathematics Classes?
Mentor: Prof. G. Keihany
- 10:00 a.m. **Olen Harris**, Incoming Freshman, Fort Valley State University
The Use of Pelleted Feed During Dry Conditions
Mentor: Dr. Curtis Borne
- 10:10 a.m. **Chateireya Fordham**, Incoming Freshman, Fort Valley State University
Effects of Poultry Fat and Canola Oil on Milk Yield and Composition of Dairy Goats
Mentor: Dr. Brou Kouakou
- 10:20 a.m. **Stephen Brown**, Senior, Stockbridge High School, Stockbridge, Ga.
A Neighborhood Review: The Woolfolk Chemical Work Site
Mentor: Dr. Jacques Surrency

- Break -

Session II

10:40 - 12.10 p.m. Presentations by REU Program Participants

- Presiding:** **Mr. James P. Morgan**, 2007 FVSU Plant- Science Biotech Graduate
(Accepted at National Institute of Health (NIH) in Post Bac. Program)
- 10:40 a.m. **Livia C. Pagán**, Sophomore, Universidad Metropolitana, San Juan, Puerto Rico
Genetic Transformation of *Arundo donax* Using Microprojectile Bombardment
Mentor: Dr. Sarwan Dhir
- 10:50 a.m. **Kaisa Müller**, Sophomore, Universidad Metropolitana, San Juan, Puerto Rico
Genetic Transformatiion via *Agrobacterium* on Valeria (*Valeriana officinalis*)
Mentor: Prof. Seema Dhir
- 11:00 a.m. **Kacie McInvale**, Junior, Fort Valley State University
Effect of Growth Regulators on Callus Induction and Somatic Embryogenesis of *Jatropha curcus*: A Biofuel Plant
Mentor: Dr. Hari Singh
- 11:10 a.m. **Lauren Byrd**, Junior, University of Georgia, Athens, Ga.
Agrobacterium tumefaciens in Strawberry with a Focus on Preculture Duration and Construct Variation
Mentor: Prof. Seema Dhir

- 11:20 a.m. **Nezhla Sanderson**, Senior, Allen University, Columbia, S.C.
Effects of *Sericia lespedeza* Hay has on the Concentration of Gastrointestinal Nematodes (GINs) in Goats
Mentor: Dr. Tom Terrill
- 11:30 a.m. **Quintina Rogers**, Junior, Albany State University, Albany, Ga.
Cultivar Identification and Genotypic Comparisons in Rice (*Oryza sativa* L.) by Using RFLP
Mentor: Dr. Hari Singh
- 11:40 a.m. **T. Janea Howard**, Junior, Fort Valley State University
The Effects of Three Different Cytokinins on Somatic Embryogenesis of *Valeriana officinalis*
Mentor: Dr. Sarwan Dhir
- 11:50 a.m. **Terrica Morris**, Junior, Saint Augustine College, Raleigh, N.C.
Factors Influencing Electroporation Mediated Genetic Transformation to *Stevia rebaudiana* Protoplasts
Mentor: Dr. Sarwan Dhir
- 12:00 Noon **Ulysses C. Pickard**, Sophomore, Clayton State University, Morrow, Ga.
Molecular Marker Aided Comparative Genome Sampling and Identification of Gene Expressing Submergence Tolerance in Rice
Mentor: Dr. Hari Singh and Prof. Seema Dhir

Session III

**12.20 - 2.00 p.m. Room 103 and 104
Pettigrew Farm and Community Life Center**

Presiding: **Mrs. Angela Askew Hite**, Coordinator, HBCU-UP and REU- Site Programs

- Lunch -

- 1:00 p.m. Introduction of Speaker
Dr. Canter Brown, Jr.
Special Assistant & Council to the President, Fort Valley State University
- 1:10 p.m. Keynote Speaker: **Dr. Camille A. McKayle**
Program Director, HBCU-UP
National Science Foundation, Arlington, Va.
- 1:30 p.m. **Dr. Daniel K. Wims**
Executive Vice-President for Academic Affairs, Fort Valley State University
- 1:40 p.m. **Presentation of Certificates of Achievements and Awards**
- 2:00 p.m. **Comments on Behalf of Participants and Parents**
- 2:10 p.m. Closing Remarks
Dr. Sarwan Dhir, Associate Professor, Biotechnology
Director, NSF HBCU-UP and REU-Site Programs



2007 SRAP Program Participants



Horecia L. Williams

Incoming Freshman, Fort Valley State University

Horecia is an incoming freshman at Fort Valley State University. Her community activities include participating in the Big Brother-Big Sister and Youth Leadership programs, volunteering for the annual Senior Citizen Spring Fling, and participating in the D.A.R.E Role Model program. Her future plans include pursuing a career as a registered nurse or as a physician's assistant.



Beruk Lemma

Incoming Freshman, Fort Valley State University

Beruk is an incoming freshman at Fort Valley State University. He plans to major in plant science and focus on biotechnology. Thanks to the Summer Research Apprenticeship Program (SRAP), Beruk is getting a head start on college life and the field of biotechnology.



Hakeem J. Broomfield

Incoming Freshman, Fort Valley State University

Hakeem has been awarded a NSF-STEM Scholarship. He is also a member of DECA: an association of marketing students. Hakeem is a 2007 incoming freshman at Fort Valley State University. He will be majoring in plant science with a biotechnology option.



Chateireya R. Fordham

Incoming Freshman, Fort Valley State University

Chateireya is an incoming freshman at Fort Valley State University. When she begins her fall semester, she will major in chemistry with a special interest in Spanish. She plans to pursue a career in pharmacy. She has received numerous awards for her scholarly achievements and performance in extracurricular activities.



Octavia Holloway

Incoming Freshman, Fort Valley State University

Octavia will enter Fort Valley State University as a freshman and as a Presidential Scholar. She plans to pursue a career in mathematics and minor in education. She is researching the impact of students' mathematical backgrounds on their performance in college level mathematics.



Olen Harris

Incoming Freshman, Fort Valley State University

Olen is a 2007 incoming freshman at Fort Valley State University. He plans to pursue a career in electrical engineering technology. Olen's career goal is to open his own electric wiring company. Olen was the captain of the Warner Robins High School Varsity Swim team. He made the all country swim team this year.



Erik B. Coleman

Incoming Freshman, Fort Valley State University

Erik is an incoming freshman at Fort Valley State University. He plans to pursue a career in electronics engineering technology. Erik was first chair tenor saxophone player in the Northside High School's Blue Wind Marching Band.

2007 SRAP Program Participants



Mario C. Turner

Incoming Freshman, Fort Valley State University

Mario is an incoming freshman at Fort Valley State University. He plans to major in plant science biotechnology. His future plans include attending college for four years and continuing on to obtain a Master's degree and a Ph.D.



Monica Sullivan

Incoming Freshman, Fort Valley State University

Monica Sullivan is an incoming freshman at Fort Valley State University. She plans to major in biology and minor in mathematics to become a veterinarian. She plans to attend vet school to earn her license and hopes to cure diseases that endanger the lives of animals.



Stephen A. Brown

Senior, Northside High School

Stephen is a rising senior at Northside High School (NHS) in Warner Robins, Ga. He intends to pursue an academic and a vocational career in the computer technology field. After graduating from NHS he plans to continue his education in the computer field.



Brittany N. Turner

Incoming Freshman, Fort Valley State University

Brittany is an incoming freshman at Fort Valley State University. She plans to pursue a degree in biology. Her future plans include opening her own practice and continuing her community involvement. She has enjoyed the experience and opportunities that the Summer Research Apprenticeship program (SRAP) offered.



Brittany S. Rucker

Incoming Freshman, Fort Valley State University

Brittany is an incoming freshman at Fort Valley State University, and has been awarded a Science, Technology, Engineering, Mathematics (STEM) scholarship to pursue her studies in plant science biotechnology. She has had a great experience with learning new things and has acquired hands-on experience in the lab. She is eager to start her freshman year and excited to conduct further research in the lab as well as gain more knowledge about plant science biotechnology.



Jaleese R. Oglesby

Senior, Peach County High School

Jaleese is a senior at Peach County High School. Upon graduation, she plans to attend Fort Valley State University. Her future plans include opening her own physician practice. She has enjoyed the opportunities that the summer research apprenticeship program has offered her to further her goals.



Brandon Crumsey

Incoming Freshman, Fort Valley State University

Brandon is an incoming freshman at Fort Valley State University majoring in plant science. His extracurricular activities include soccer, track and field, and numerous clubs. He plans to pursue a career in the plant science field, possibly dealing with alternative fuels.

2007 REU Program Participants



Terrica Morris

Senior, Biology Major, Saint Augustine's College

Terrica plans to attend graduate school to become a physical therapist. She says, "Overall this research program has really been a learning experience. I never thought I could attain so much information in such a small amount of time. I definitely credit all my achievements and success to God."



T. Janea Howard

Junior, Chemistry Major, Fort Valley State University

Upon graduation, Janea plans to pursue a career in pharmacy. As a high achieving student, Janea has received academic awards which include consecutive yearly Dean's List Honors awards for outstanding academic performance and achievements. Janea believes that "the only way to have fulfillment and joy in life is to leave all paths clear for the possibilities of the future."

Kaisa T. Müller

*Sophomore, Cell & Molecular Biology
Universidad Metropolitana*

Kaisa's extracurricular activities include tutoring and mentoring high school and college students in mathematics. She is also the secretary of the Chimeia chemistry club. Kaisa is a Model Institutions for Excellency (MIE) Scholar, which is sponsored by the National Science Foundation, and is a part of the Excellency list. Her future goals include attending medical school and becoming a surgeon.



Quintina N. Rogers

Junior, Biology Major, Albany State University

Quintina's future career goals consist of biomedical research as it pertains to microorganisms. "Being a part of Fort Valley State University's REU program has been an exciting and adventurous experience" stated Ms. Rogers. "This program has exposed me to many different methods and techniques that can be carried with me and performed throughout my scientific career."



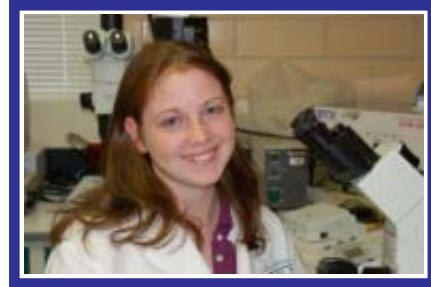
2007 REU Program Participants



Ulysses C. Pickard

Sophomore, Biology Major, Clayton State University

Ulysses has a strong interest in genetics and biotechnical research concerning specific gene isolation. "I truly believe that the expanding field of bioinformatics will benefit all spectrums of the medical field and that is something I want to contribute my knowledge and experiences toward in order to make a difference in society and improve the standard of living for everyone."



Lauren Byrd

Junior, Biochem/Mol. Biology Major, University of Georgia

Lauren is a member of UGA's Honors program and its Redcoat Marching Band. She is active in the Houston Regional and Georgia State Science and Engineering Fairs as a participant and judge, and has competed twice at the International Science and Engineering Fair. She plans to pursue a Ph.D. in biochemistry and a Master's in public health to become a virologist.



Nezhla Sanderson

Senior, Biology Major, Allen University

Nezhla is a senior biology major from Allen University. She believes the REU program provides opportunities of learning new laboratory techniques and educational experience in science. Nezhla has received several scholarships and honors awards. She has been named a Kellogg's Public Scholar. Her philosophy for life is "Strive for excellence!"



Kacie McInvale

Junior, Biology Major, Fort valley State University

Kacies's field of study is biology with a focus in health science. After graduating in 2008, she plans to attend dental school and graduate in general dentistry. In the future, she plans to open her own general dentistry practice.



Livia C. Pagán

Sophomore, Biology Major, Universidad Metropolitana

Livia currently majors in biology and minors in marine sciences. She is a Model Institutions for Excellence (MIE) Scholar, which is sponsored by the National Science Foundation. Her future goals include finishing her bachelor's degree, earning a Ph.D. in marine science, owning a facility for science investigations, and providing a refuge for marine species, especially those on the verge of extinction.

2007 REU & SRAP Program Activities



Acknowledgments

Dr. Larry E. Rivers, President
Fort Valley State University
Fort Valley, Ga.

Dr. Daniel Wims
Executive Vice President of Academic Affairs
Fort Valley State University
Fort Valley, Ga.

Dr. Mark Latimore Jr.
Interim Dean, College of Agriculture, Home
Economics, and Allied Programs
Fort Valley State University
Fort Valley, Ga.

Mr. Arthur Henderson
Vice President for Business and Finance
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Fort Valley, Ga.

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Director, HBCU-UP and CREST Program
National Science Foundation
Arlington, Va.

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Dr. Sally O' Connor
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National Science Foundation
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Special Thanks to: Mrs. Angela Askew-Hite, Program Coordinator; Dr. Hari Singh, Research Associate; Ms. Kaye Knowles, Research Technician; Ms. Heather Bowens, Lab Assistant; Ms. Martha Bright; Ms. Betsy B. Ampofo; Ms. Alisha Williams; Mr. James P. Morgan; Ms. Ayanna McPhail; Mrs. Marquinta Gozalez; Ms. Annette Coward; and Mr. B.K. Lilja for their outstanding contributions to the program.

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