

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

*2005 CLOSING CEREMONY
SUMMER RESEARCH APPRENTICESHIP PROGRAM AND
RESEARCH EXPERIENCES FOR UNDERGRADUATES IN BIOTECHNOLOGY*

FORT VALLEY STATE UNIVERSITY

A UNIT OF THE UNIVERSITY SYSTEM OF GEORGIA

WEDNESDAY, AUGUST 3, 2005

C. W. PETTIGREW FARM AND COMMUNITY LIFE CENTER



Front from left: Robyn J. Williams, Selena Robinson, Tierraney Oliver, Monica Umpierre
Second Row: Lety Gonell, Safira A. Sutton, Rose-Ann M. Gillespie, Adriene Lucas, Shireem Dhir, Hussein Salifu, Sami Ahmed, Jasmine Boyd, Ryan Burke, Stacy Arrington, Janelise Torres
Not Shown: Kiofa E. Clark, Amaris Askew



SPONSORED BY
THE NATIONAL SCIENCE FOUNDATION
(HBCU-UP AND REU-SITE PROGRAM)

AND
FORT VALLEY STATE UNIVERSITY



A Message from the President



Dear SRAP and REU Program Participants:

Congratulations on completing the Summer Research Apprenticeship Program (SRAP) and Research Experiences for Undergraduates (REU) in Biotechnology Program at Fort Valley State University. We are proud of the SRAP and REU Programs, their offerings and opportunities, their faculty and staff, and we are certainly proud of you! We are glad that you took advantage of this tremendous opportunity because it indicates that you are serious about your education, your academic success and your future.

The value of hands-on experiences cannot be overemphasized. Your participation in the program provided you with hands-on experience, an intimate look at the field of biotechnology, and an opportunity to work with some of the most outstanding faculty in the sciences within the University System of Georgia. For those of you who are undergraduates in the REU program, we are sure your experiences validate your wise decision to choose FVSU as your university. And for those of you who are in high school, please know that your participation provided us with an opportunity to meet some of the brightest rising stars that education has to offer. This was a win-win situation, and we hope that you give FVSU the highest consideration when choosing your undergraduate institution.

As many of you know, education is a privilege in some parts of the world. At Fort Valley State University, we believe it is your right. We are proud that you are exercising your right to advance your education. Whether an undergraduate or in high school, we stand ready to assist you in any way that we can as you move forward educationally. We celebrate this occasion and your accomplishments with you, and we look forward to your continued success as you pursue academic excellence!

Sincere best wishes,

A handwritten signature in black ink, which appears to read "W. H. Harris".

William H. Harris
President

Our Keynote Speaker



Dr. Danielle N. Gray
Princeton University, Princeton , New Jersey

Dr. Danielle N.Gray, Assistant Dean of Academic Affairs and Diversity at Princeton University, received her bachelor’s degree in mathematics at Xavier University of New Orleans, Louisiana; earned her doctorate in neuroscience with a concentration in molecular biology from Tulane University; and pursued her postdoctoral training at Harvard University and Baylor College of Medicine in genetics. Dr. Gray’s educational training was fully subsidized by merit fellowships (United Negro College Fund-Merck & Co. and the Louisiana Qualifying Fund), amassing more than \$225,000 for stipend support for both her doctoral and post-doctoral training.

Although Dr. Gray’s launched her career as an academic and administrator not more than six years ago, her career has been marked by a number of outstanding accomplishments, especially with regards to increasing access to the professoriate for underrepresented groups in the STEM fields. Most notably, Dr. Gray served as the Sr. Associate Director for one of the National Science Foundation Science and Technology Centers, the Center for Behavioral Neuroscience at Emory University, where she also served as a faculty in the Neuroscience and Behavioral Biology Program. During her tenure at Emory, Dr. Gray secured more than \$30 million in extramural funding from the National Science Foundation and the National Institutes of Health. These funds were used to design and implement the BRAIN (Behavioral Research Advancements program, a 10-week summer research initiative; PROMISE (Postbaccalaureate Research Opportunities for Minorities in the Sciences and Engineering) program, a post-baccalaureate program in the biological sciences; and the Emory-GaTech AGEP (Alliance for Graduate Education and the Professoriate) and Neuroengineering program. Collectively, these programs have provided more than 500 students the opportunity to experience firsthand the rigors of resarch and graduate study.

Dr. Danielle N. Gray and her husband, Sunil Singh I, are the soon-to-be proud parents of Sunil “Little Sun” Singh, II. She and her husband currently reside in Princeton, New Jersey.

Wednesday, August 3, 2005
Room 102, C.W. Pettigrew Farm and Life Center
Fort Valley State University

PROGRAM

Session I

Presiding: Ms. Danier Moore, 2005 FVSU Biology Graduate

- 8:15 a.m.** Welcome and Program Purpose
Dr. Mack C Nelson
Dean, College of Agriculture, Home Economics & Allied Programs
- 8:20 a.m.** Recognition of parents and guests
- 8:30 - 9:40 a.m.** **Presentations by SRAP and Mentorship program participants**
- Presentations -**
- 8:30 a.m.** **Jasmine Boyd**, Senior, Benjamin Banneker High School, College Park, Ga.
The Rapid Advancement of Biosensor Technology
Mentor: Dr. Yubin Lan
- 8:40 a.m.** **Ryan Burke**, Junior, Westside High School, Macon, Ga.
Effectiveness of Tahitian Noni Juice as Nutritional Horse Supplement
Mentor: Dr. Curtis Borne
- 8:50 a.m.** **Tierraney Oliver**, Senior, Butler High School, Augusta, Ga.
Comparison of Water and Soil Samples From Selected Middle Georgia Locations
Mentor: Dr. Melinda Davis
- 9:00 a.m.** **Selena Robinson**, Senior, Harlem High School, Harlem, Ga.
The Effects of Alfalfa and/or Concentrate Diet on Levels of Ammonia and Volatile Fatty Acids in Growing Spanish Boer Cross Goats.
Mentor: Dr. Brou Kouakou
- 9:10 a.m.** **Sami Ahmed**, Junior, Stratford Academy, Macon, Ga.
Foresnsic DNA Fingerprinting
Mentor: Kaye Knowles
- 9:20 a.m.** **Shireen Dhir**, Freshman, Houston County High School, Warner Robins, Ga.
Regeneration and cloning of *Stevia* plant: A low calorie sweetner
Mentors: Kaye Knowles
- 9:30 a.m.** **Stacy Arrington**, Senior, Davidson Fine Art Magnet School, Haphzibah, Ga.
Microbial Profile of Refrigerated and Frozen Cheddar type Goat Cheese over a 4- week Period
Mentors: Dr. Isabel Blackman and Dr. Young Park
- 9:40 - 10:00 a.m.** -----**Break**-----

Session II

Presiding: Ms. Allison Lester, Senior, Plant Science Biotechnology Scholar
Fort Valley State University

10.00 - 11.40 a.m. Presentations by REU program participants

- Presentations -

- 10:00 a.m. **Rose-Ann M. Gillespie**, Fort Valley State University, Fort Valley, Ga.
A Nationwide Survey of Llama & Alpaca Farms Focusing on Parasite Issues and
Althemintic Practices.
Mentor: Dr. Tom Terrill
- 10:10 a.m. **Lety Gonell**, Polytechnic University of Pureto Rico, San Juan, Pureto Rico
The Effect of Different Parameters on *Agrobacterium* Mediated
Transforamtion in Cherry Tomato
Mentor: Mrs. Seema Dhir
- 10:20 a.m. **Robyn J. Williams**, Jarvis Christan College, Longview, Texas
Culture and Regeneration of *Stevia rebaundiana* Mesophyll Protoplast
Mentors: Kaye Knowles and Dr. Sarwan Dhir
- 10:30 a.m. **Janelise Torres**, Polytechnic University of Pureto Rico, Guaynabo, Pureto Rico
Gene Trasnfer in *Stevia rebaundiana* Mesophyll Protoplast Using Electroporation
Mentors: Kaye Knowles and Dr. Sarwan Dhir
- 10:40 a.m. **Safira A. Sutton**, Fort Valley State University, Fort Valley, Ga.
Optimization of Parameters for *Agrobacterium* Transformation of Cherry Tomato
Mentor: Mrs. Seema Dhir
- 10:50 a.m. **Hussein Salifu**, Fort Valley State University, Fort Valley, Ga.
Comparison of Techniques for Isolation of Genomic DNA
Mentor: Dr. Hari P Singh
- 11 a.m. **Monica Umpierre**, Universidad Metropolitana, San Juan, Pureto Rico
Genetic Transformation *via* Particle Bombartment of *Arundo donax*
Plants Through Somatic Embryogenesis
Mentors: Kaye Knowles and Dr. Sarwan Dhir
- 11:10 a.m. **Amaris Askew**, Macon State College, Fort Valley, G.a.
Bacterial Transformation and Purification of Green Fluorescent Protein (GFP)
Mentors: Kaye Knowles and Dr. Hari P Singh

Presentations by REU program participants

- 11:20 a.m. **Adriene Lucas**, Fort Valley State University, Fort Valley, G.a.
Factors Affecting *Agrobacterium* Mediated Genetic Transformation
of Valeria
Mentor : Mrs. Seema Dhir
- 11:30 a.m. **Kiofa E. Clark**, Fort Valley State University, Fort Valley, G.a.
Somatic Embryogenesis and Plant Regeneration in Valeria
Mentors : Kaye Knowles and Dr. Sarwan Dhir

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

11:45-12:45 p.m. **Lunch**
Room 103/104, Pettigrew Farm and Community Life Center

Introduction of speaker **Ms. Thelma Madizma**, 2004 FVSU Plant Science Biotech Graduate
MS/ Ph.d Student at University of Florida, Gainesville, FL.

Speaker **Dr. Danielle Gray**
Assistant Dean of Academic Affairs
Princeton University, Princeton, New Jersey

12:45 p.m. **Dr. William H Harris**
President, Fort Valley State University

1:00 p.m. **Presentation of Certificates**

1:15 p.m. **Comments on behalf of participants/parents**

1:20 p.m. **Closing Remarks**
Dr. Sarwan Dhir, Associate Professor, Biotechnology
Director, NSF HBCU-UP and REU-Site Programs

1:30 p.m. **Adjournment**



2005 SRAP and Mentorship Programs Participants



Stacy Arrington

Senior, Davison Fine Art Magnet School

She entered the SRAP program to get exposure to biomedical research, broader knowledge of the science field and meet peers her age also interested in the sciences.



Jasmine Boyd

Senior, Benjamin Banneker High School

I feel that the program will provide me with better experience in science for my college education and the future career of aerospace engineering.



Ryan Burke

Senior, Westside High School

He plans to major in pharmacy. He says, "SRAP is a great program to meet new people and learn the science of Biotechnology."



Tierraney Oliver

Graduate, Butler High School

Tierraney said she joined the program to gain knowledge on how to work in a lab and present her findings to a group of people.



Selena Robinson

Graduate, Harlem High School

Selena's major goal for the summer was to gain valuable lab experience before starting college.



Sami Ahmed

Junior, Stratford Academy

He is a part of the mentorship program and he is excited to do the research experiment during the summer.



Shireen Dhir

Freshman, Houston County High School

I have had a great experience learning new scientific techniques in the lab and I am thankful for this opportunity.

2005 REU PARTICIPANTS



Amaris Askew
Junior, Biology Major
Macon State College

"I have found a new way to respect for the REU program. It is vitally important in our everyday lives. The different sizes and colors of fruit and vegetables are determined through the advanced technology of biotechnology. This was truly a learning experience for me and I would recommend it to anyone."



Janeliese Torres
Senior, Environmental Engineering Major
Polytechnic University of Puerto Rico

"I am a senior Environmental Engineering at Polytechnic University of Puerto Rico. I plan to pursue my masters in a related area or environmental law tech. REU program has given me the tools to become a better student and also to meet an excellent group of people."



Rose-Ann M. Gillespie
Senior, Veterinary Tecnology
Fort Valley State University

"Experience with REU has been a wonderful and unique opportunity for me. It was an exciting experience to work in the lab."



Lety Gonell
Junior, Environmental Engineering Major
Polytechnic University of Puerto Rico

"I would like to recommend the REU program to any student interested in science. The opportunity of being here have been a great experience, in which I realize my interest for biotechnology and what I would like for my future career plans. I will never forget this amazing opportunity and all of the knowledge that I gained as a REU participant."



Adriene Lucas
Senior, Biotechnology Major
Fort Valley State University



"I am a rising senior at Fort Valley State University majoring in plant science biotechnology. This program was very perfect for me in that I was able to learn new concepts and techniques that will better prepare me for future career plans. I would recommend this program to any student whether they plan to go to graduate or professional school."

2005 REU PARTICIPANTS



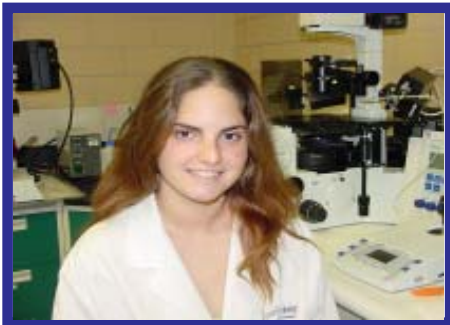
Safira A. Sutton
Junior, Plant Science Major
Fort Valley State University

"Through the REU program, I feel that I am gaining the essential skills of success. My communication and laboratory skills have improved greatly. This program is opening doors for me to a new beginning. It has been an enlightening experience and I hope to gain a great job upon completion of the program."



Kiofa E. Clark
Senior, Biology Major
Fort Valley State University

"I have learned valuable skills that will help me with my future endeavors. I feel that Dr. Dhir and his staff are an excellent group of individuals who will stop at nothing to ensure that each member of this program goes straight to the top."



Monica Umpierre
Sophomore, Cell and Molecular Biology
Universidad Metropolitana

"Thanks to this experience I have made one of my dreams come true. Now, I can finally say that I have research experience. I applied for the internship to gain research skills and because it will help me in my future plans. Special thanks to Dr. Dhir for helping me out with my research and for granting me this grateful experience."



Robyn J. Williams
Junior, Biology Major
Jarvis Christian College

"I am a senior at Jarvis Christian College. I am a chemistry major. I plan on attending Louisiana State University, University of Houston, Tulane, Baylor, or Emory for graduate studies. I am an active member of Sigma Gamma Rho, Sorority Inc."



Hussein Salifu
Sophomore, Plant Science Major
Fort Valley State University

"The REU program has really been a great experience. I have gained a great deal of skills which has improved my knowledge in the field of research."

2005 Program Activities



Acknowledgments

Dr. William H Harris, President
Fort Valley State University
Fort Valley, Georgia

Dr. Mack Nelson, Dean
College of Agriculture, Home Economics,
and Allied Programs
Fort Valley State University
Fort Valley, Georgia

Dr. Yvonne B. Oliver
Vice President of Academic Affairs
Fort Valley State University
Fort Valley, Georgia

Mr. E. Thomas Oliver
Vice President for Business and Finance
Fort Valley State University
Fort Valley, Georgia

Ms. Barbara Humphrey, Budget Director
Fort Valley State University
Fort Valley, Georgia

Dr. Victor Santiago
Director, HBCU-UP and CREST Program
National Science Foundation
Arlington, Virginia

Dr. Jessie DeAro
Program Assistant Director
HBCU-UP Program
National Science Foundation
Arlington, Virginia

Dr. Clinton H. Dixon
Chair, Biology Department
Fort Valley State University
Fort Valley, Georgia

Dr. Julius Scipio
Dean
College of Arts and Sciences
Fort Valley State University
Fort Valley, Georgia

Dr. Isaac Crumbly
CDEP Director
Associate Vice President for
Fort Valley State University
Fort Valley, Georgia

Dr. Sally O' Connor
Program Director, REU Site Program
National Science Foundation
Arlington, Virginia

Special Thanks to: Mrs. Angela Askew Hite, Program Coordinator; Brandon Poole, Fitsum Berhane, Chitzu Hirtata, Kaye Knowles, Research Technician; Heather Bowens, Lab Assistant; Mr. Thomas Howard, Danier Moore, Cutreal Phillips, Derrick Barker, Ms. Marquinta Daniely, and Mr. Gale (B.K.) Lilja for their outstanding contributions to the program.

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