

*“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 Program Director



Dear Parents, Colleagues, and Students:

Welcome to the closing ceremony for the Research Experience for Undergraduates (REU) in Biotechnology and for the Summer Research Apprenticeship Program (SRAP) for high school students programs funded by the National Science Foundation (NSF) since 2001.

In the last four (4) years, fifty seven (57) students have participated in the SRAP program. Of these, 51 (90%) are currently enrolled at Fort Valley State University. In this group, twenty (20) students have been awarded NSF-STEM scholarships and the remaining 31 students have received Plant Science-Biotechnology scholarship under the USDA Capacity Building Program.

Our SRAP participants have experienced science in the classroom at the highest level. In addition, they have witnessed and experienced laboratory and field practices utilized by highly skilled scientists in the best laboratories and universities across Georgia and other states. They are involved in preparatory classes for college biology, chemistry and math. Our students have developed the skills necessary to read scientific literature, how to take and process various types of samples in the field and laboratory, and how to complete the analysis of the samples they take. They have been involved in a variety of activities designed to advance their success in any collegiate scientific environment irrespective of the institution or location. Today, our students will present to you the results of some of their successful activities. Some of these SRAP students today will be the REU participants of tomorrow at Fort Valley State University and or at other major institutions and will continue to have a passion for summer research programs like this one.

Given the continued success of the REU and SARP, sincere thanks are extended to our colleagues who have taken the time and made the effort to interact with and mentor these students. We appreciate all that they have done. Our thanks also go to the students who participated in our programs and to their parents who supported them. We extend to each of you good luck and best wishes in your future academic and scientific endeavors.

Sincerely,

A handwritten signature in black ink, appearing to read "Sarwan Dhir".

Sarwan Dhir
Associate Professor, Biotechnology
Director, NSF REU-Site & HBCU-UP Programs

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 Resarch 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**



2006 SRAP and Mentorship Programs Participants



Brian Bell

Graduate, Westover High School

He plans on attending Fort Valley State University in the fall and majoring in Plant Science/Biotechnology. His goals are to help make more fertile soil which will lead to a greater healthier outlook in plants. His interests are learning new things and playing sports, and working outdoors



Brandon Bell

Graduate, Westover High School

Brandon will be an incoming freshman at Fort Valley State University in the fall majoring in Biology. After he completes his four years at FVSU, he plans to attend graduate school and major in Marine Biology.



Tiffany Campbell

Graduate, Camden County High School

Her hobbies include writing poetry, reading, drawing and being with her family and friends. Throughout her high school career, Tiffany participated in basketball, track and field, student council, and Future Business Leaders of America (F.B.L.A). She also volunteers at the local summer camp at her church. Tiffany's future plans are to attend Fort Valley State University in the fall and major in Accounting with a minor in Agricultural Economics.



Christopher Qualls

Graduate, Camden County High School

In the fall he plans on majoring in Veterinary Medicine at Fort Valley State University. .During the summer, he volunteered with KingsBay Veterinary Clinic.



Preston Brown

Junior, Stratford Academy

In the fall he plans on majoring in Veterinary Medicine at Fort Valley State University. .During the summer, he volunteered with KingsBay Veterinary Clinic.



Zakirah Muhammed

Graduate, Northeast High School

She plans on attending Fort Valley State University in the fall and major in Animal Science. She would not only like to work with pets and farm animals, but also with wild animals as well. In high school, Zakirah was apart of the Science Club, Beta Club, and an editor for two years on the Salmagundi Staff (Northeast High School literary magazine).



Luis Otero

Graduate, Nuestra Señora de la Providencia

In the fall he plans on majoring in Mass Communications and minor in Biology or Environmental Science at Fort Valley State University. Luis is a three consecutive year finalist in the International Science and Engineering Fair (ISEF) in 2004(Portland, OR), 2005(Phoenix, AR), and 2006(Indianapolis, IN). He is also a Radio Broadcaster who has worked in several radio stations and collaborated with Sport TV and radio programs all around Puerto Rico and the U.S.



Chinakasiobi Mbata

Graduate, Westside High School

His plans are to major in Biology and Chemistry. What motivates Chinny is the fact that almost everyone on his family is in the science field. His Uncle Spella is an orthopedic surgeon, his uncle Godwin is a medical doctor in Nigeria, and his father is a professor in Fort Valley's science department. He intends to use this program to better understand how to do research and to get him ready for college.



Jasmine Graham

Graduate, Northeast High School

Jasmine plans on attending Fort Valley State University in the fall and major in Agricultural Engineering. By joining the Summer Research Apprenticeship Program has given her opportunity to meet new and exciting people as well as hands on experience on what college life is really like. Jasmine says that just being her is a pleasure within itself, and she will cherish the experience forever.



Blanton McGhee

Senior, Peach County High School

In the future his are plans to attend college with a major in Biology and hopefully become a borderless pharmacist, where he could provide medical aid for those who need it the most, like people in third world countries. Blanton developed the mentality to help the less fortunate from being in clubs like 4-H, Jack and Jill of America, and Y-club. To pass free time, Blanton enjoys playing all sports, video games, and board games. One of the quotes he lives his life by is "the more you put in it, the more you get out of it."

Tomia Hines

Graduate, Westlake High School



Tomia will be an incoming freshman at Fort Valley State University this fall. Throughout her high school career, Tomia was the president of Earth Tomorrow, an environmental awareness club that aimed to get the teens of metro Atlanta involved in community and environmental issues. In addition to that, Tomia has also completed 300 hours with the National Wildlife Federation. With plans to major in Biology, she hopes to pursue a career in medicine as a family health care physician, which will allow her to give back to her community.



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 Technology
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



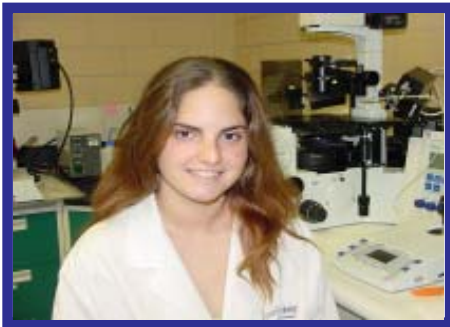
Safira A. Sutton
Junior, Plant Science Major
Fort Valley State University

"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."