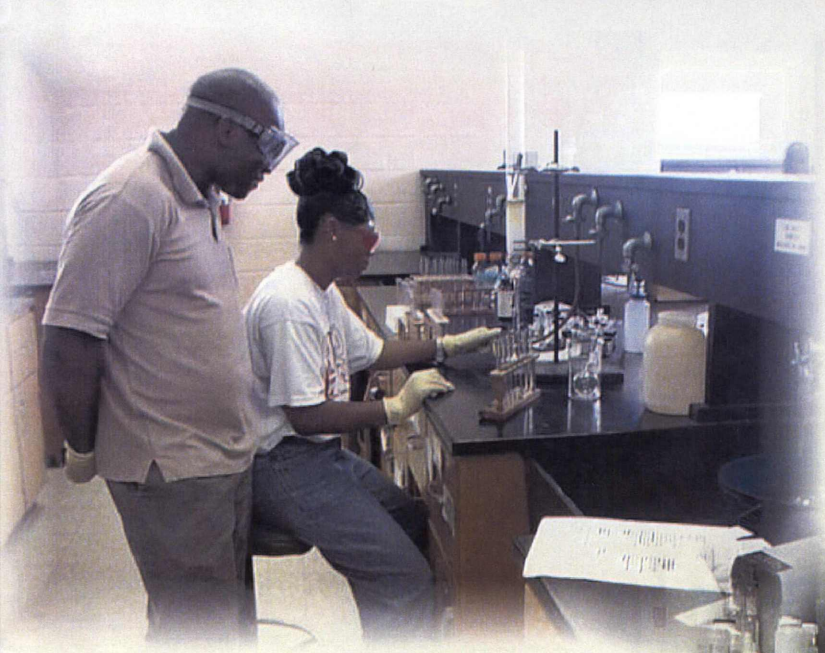


South Carolina Alliance for Minority Participation

AMP

Sixth Annual Science & Engineering Research Conference

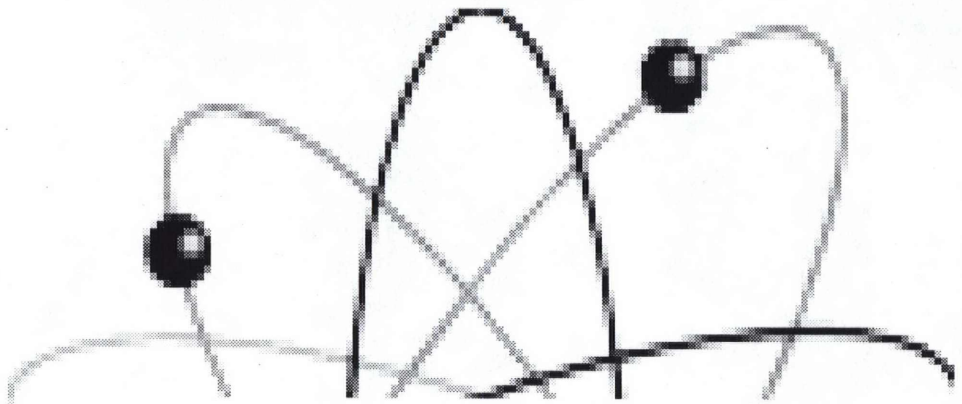
July 29, 2000

South Carolina Alliance for Minority Participation

AMP

6th Annual Science & Engineering
Research Conference
Columbia, South Carolina

Introduction



The South Carolina Alliance for Minority Participation **(SCAMP)** Program represents diversity and undergraduate excellence in the areas of science, engineering and mathematics **(SEM).** Offered at eight South Carolina institutions of higher learning, SCAMP programs and activities promote academic excellence for SEM majors, particularly for students from underrepresented groups. **SCAMP** sponsors an annual Summer Research Program for undergraduate students wherein they conduct research for eight weeks during the summer in academic, industrial or government laboratories.

A mandatory component of the summer research program is participation in the annual **Science & Engineering Research Conference.** Over fifty **SCAMP** scholars presented their research to a group of judges, mentors, students and parents. The students competed for tuition and book scholarships on July 29, 2000 at the University of South Carolina Russell House.

July 29, 2000

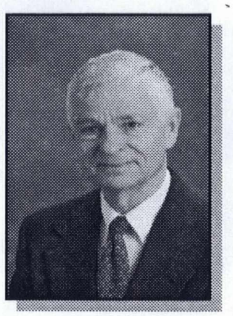
South Carolina Alliance for Minority Participation

AMP

6th Annual Science & Engineering
Research Conference
Columbia, South Carolina

Directory

Statewide Office



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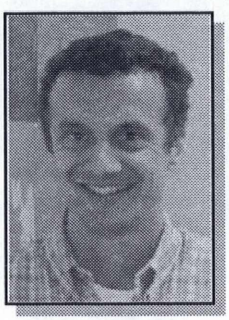

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Sponsors

- ⇒ National Science Foundation
- ⇒ State of South Carolina
- ⇒ Savannah River Operations Office/ Department of Energy
- ⇒ Spallation Neutron Source/ Oak Ridge National Laboratories
- ⇒ Partner Institutions

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July 29, 2000

South Carolina Alliance for Minority Participation

AMP

6th Annual Science & Engineering
Research Conference
Columbia, South Carolina

AGENDA

University of South Carolina

9:00 - 9:20 a.m.	Registration
9:20 - 9:40 a.m.	Welcome: Dr. Ralph White, Dean of Engineering, USC Dr. Angela W. Williams, Project Manager, SCAMP
9:40 – 9:50 a.m.	Presentation Overview: Mr. Mike Perkins, SCAMP Director-USC
10:00 – 12:00 p.m.	Student Presentations Rooms (203,205,304,305,315)
12:15 – 2:00 p.m	Luncheon Ballroom B • Introduction of Speaker: Dr. Judith Salley, SCAMP Director-SCSU • Speaker, **Senator John W. Matthews** Chairman, Legislative Black Caucus Outstanding Research Mentor Awards • Dr. Frederick Meadows, USDA-ARS, Athens, GA • Dr. David Scott, Biology Department, SC State University • Mr. Jon Lockwood, Westinghouse Savannah River Site Special Presentations • Ms. Judy L. Trimble, Spallation Neutron Source Human Resources Manager, Oak Ridge National Laboratory, Oak Ridge TN Research Opportunities • Oak Ridge National Laboratory, Dr. Linda C. Cain • United States Department of Agriculture, Agricultural Research Services, Mr. Tony Edmund and Dr. F. E. Barton
2:15 – 3:00 p.m. Awards Ceremony, Theater	Closing Remarks: Dwayne J. White, SCAMP Co Director, USC

SPEAKER

South Carolina Alliance for Minority Participation

AMP

Senator John W. Matthews

John Wesley Matthews, Jr. resides in Bowman, South Carolina, where he received his early education. He was born on April 20, 1940, the son of the late Reverend J. W. and Victoria Williams Matthews. He graduated from South Carolina State College in 1967, and received a M.S. in education from South Carolina State College in 1976. He is married to Geraldine Hilliard of Santee, South Carolina. He is the proud father of five children.

His work experience includes teaching at Cainhoy High School and Roberts High School. He served as Principal at Galliard Primary School. He is the former President of Zenith and Triangle Cablevisions.

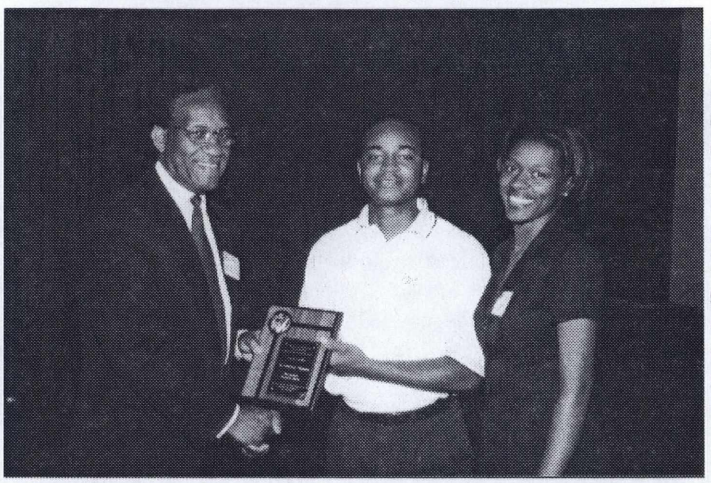
He is a member of the South Carolina State Senate, the Senior Senator from Orangeburg County representing District #39, Orangeburg-Dorchester-Bamberg-Colleton-Hampton Counties, and serves on the following committees:

⇒ Agriculture & Natural Resources Committee
⇒ Banking & Insurance Committee.
⇒ Education Committee
⇒ Finance Committee
⇒ Invitations Committee
⇒ Rules Committee
⇒ Chairman, Orangeburg County Legislative Delegation
⇒ Chairman, South Carolina Legislative Black Caucus
⇒ Board of Trustees, Voorhees College
⇒ Member, Claflin College Capital Campaign Steering and Development Committee
⇒ Member, South Carolina Sentencing Guidelines Commission
⇒ Member, Education Oversight Committee
⇒ Member, Southern Regional Education Board

He is a member of the Pineville United Methodist Church, Bowman, South Carolina and Alpha Phi Alpha Fraternity, Inc. He received the following awards and honors:

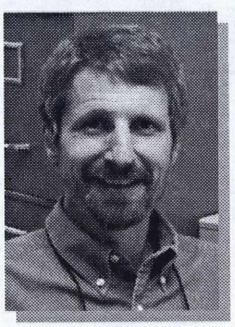
⇒ Distinguished Alumni Award, S.C. State College
⇒ Orangeburg County Democrat of the Year
⇒ Legislator of the Year, LSII NA
⇒ Honorary Doctorate, South Carolina State University
⇒ Honorary Doctorate, College of Charleston
⇒ Minority Small Business Advocate of the Year; U.S. Small Business Administration
⇒ Legislative Leadership Award; The Frank L. Roddey Small Business Development Center
⇒ Inducted into the South Carolina Black Hall of Fame

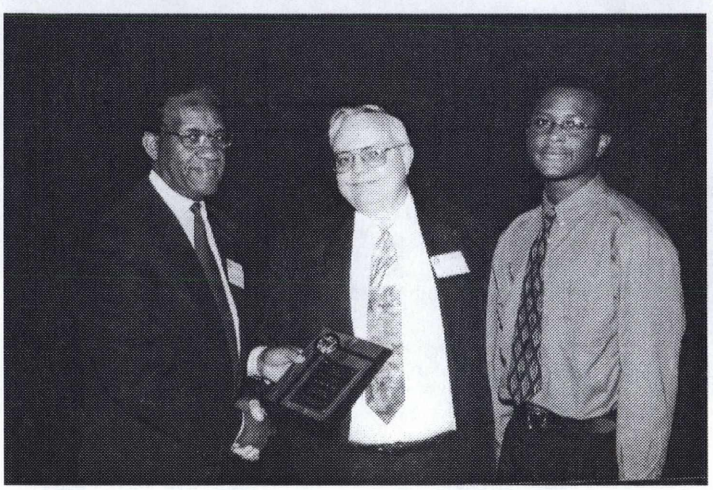
Outstanding Research Mentors



Dr. Frederick Meadows works as a Research Chemist at Agricultural Research Services, Quality Assessment Research Unit in Athens, GA. He earned a B.S. degree in chemistry from North Carolina Agricultural and Technical State University in Greensboro, NC where he received scholarships from NASA and the Alliance for Minority Participation. Fred received his Ph.D. in Bioanalytical Chemistry from Georgia State University. He investigated the near infrared fluorophores for bioanalytical applications. While in graduate school he received the Southern Regional Education Board Dissertation Fellowship, the Solvay Pharmaceuticals Fellowship, NASA Fellowship and the Georgia State University Department of Chemistry Teaching Award. Dr. Meadows was nominated for this award by his summer intern Brooks McPhail from South Carolina State University.

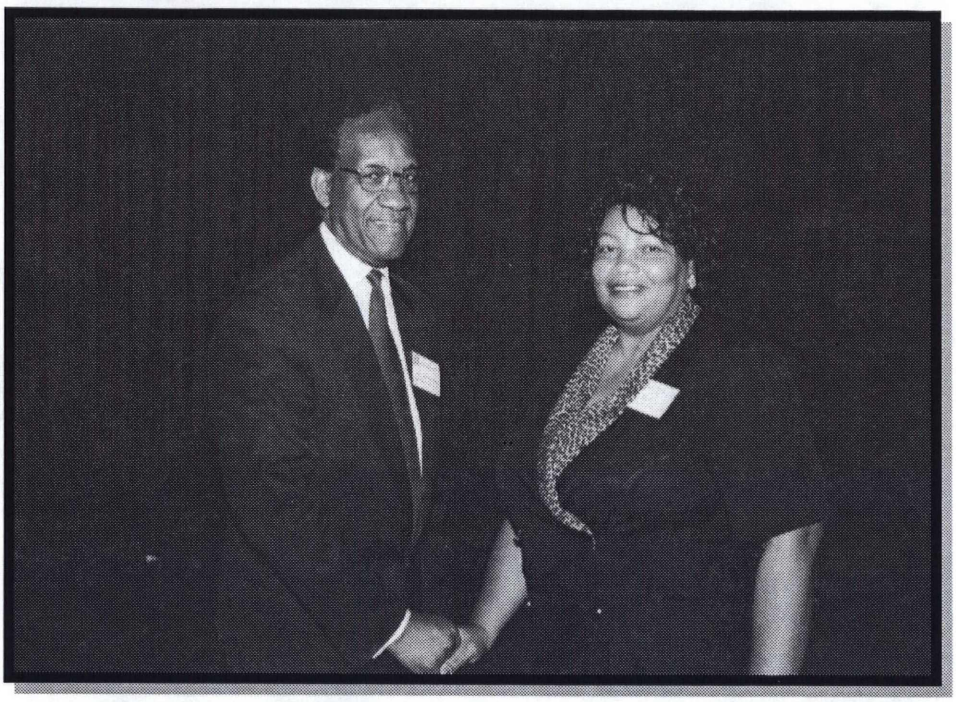
Dr. David Scott is a Professor of Biology at South Carolina State University, Orangeburg, SC. He earned a Ph.D. in Genetics from Indiana University, Bloomington, and a B.S. and M.S. in Biology from Oklahoma University. He completed his Postdoctoral work at Montana State. Dr. Scott's research at South Carolina State University involves the genetic analysis of mate preference variation in fruitflies. He has research grants from the National Science Foundation, the National Institute of Health and the United States Department of Agriculture totaling more than $750,000. He has published numerous refereed articles in journals. Dr. Scott was nominated for this award by his summer intern Courtney Young from Voorhees College. Accepting on behalf of David Scott is Dr. Judith Salley.





Mr. Jon Lockwood is a Principal Software Engineer at Westinghouse Savannah River Company, Aiken SC. Westinghouse Savannah River Company (WSRC) is the prime contractor supporting the Savannah River Site for the Department of Energy. Mr. Lockwood is involved in developing groupware applications using Lotus Notes version 5. Prior to his position at WSRC, he worked for Raytheon in St. Petersburg, FL and Harris Corporation in Melbourne FL. He has earned his B.S. degree in Electrical Engineering and his M.S. degree in Computer Science. Mr. Lockwood was nominated by his summer intern Reginald Prince from Voorhees College.

Special Presentations



Accepting on behalf of Judy Trimble is Ella Dubose from the SNS Human Resource Dept.

Ms. Judy Trimble is the Spallation Neutron Source (SNS) Human Resource Manager. Her office supported the Summer Research Program by providing laboratory placements, housing and travel for SCAMP students. The SNS project also provided t-shirts and trophies for the annual Research Conference. The SNS Project at Oak Ridge National Laboratory, Oak Ridge, TN is managed by UT-Batelle, LLC, for the Department of Energy.

Winning Abstracts

Denita Williams

"Outstanding Summer Researcher"
*This award is based on research mentors recommendations

Discipline: Biological Sciences

Institution : South Carolina State University

Reserarch Institution: USDA Agricultural Research Service Athens ,Georgia

Research Mentor: Dr. Ida E. Yates

A Novel Fungicide Controls Growth of Fusarium monillforme Collected from Diverse Geographic Areas"

Corn plants from throughout the world can be attacked by the fungus, F. monilforme. The fungus causes disease in the plant and produces mycotoxins which are damaging to human and animal health. The purpose of the research was to determine the response to a novel fungicide by F. moniliforme collected from different parts of the world. The iodine-based active ingredient in Plantpro has been used as a disinfectant in human and animal health care products, but applications to control plant pathogens is not common. Plantpro was tested for efficacy in controlling F. moniliforme by assaying growth of conidia on agar. Plantpro may prove to have commercial applications to control growth of F. moniliforme during pre-harvest to prevent seed rot in unfavorable growth seasons and during post-harvest when kernels are inadequately stored.

Angela E. Davis

Outstanding Summer Researcher"
*This award is based on research mentors recommendations

Discipline: Biological Sciences

Institution: Benedict College

Research Institution: USDA Agricultural Research Service, North Carolina State University

Research Mentor: Dr. Harold Pattee

Evaluation of Selected Peanut Genotypes for Oil Content

The peanut breeding program at North Carolina State University is evaluating selected peanut genotypes as potential parents to develop new peanut varieties which have improved nutritional and flavor qualities as well as improved agronomic qualities. This project evaluated the oil content of potential peanut variety parents. The oil content was determined by standard extraction and gravimetric techniques. The results obtained from the 1998 crop indicated that the oil content of the selected peanut genotypes ranged from 404 to 465 mg/gm. A significant difference was also found in the oil content of the genotypes when grown at three different locations. The consuming public currently has a preference for reduced fat content products. Based on these results use of the X90053 genotype as a parent, with its oil content of 404 mg/gm versus the industry standard of approximately 500 mg/gm, would be directing peanut variety development towards the consuming public's preference.

Winning Abstracts

Brian Davis

First Place" Computer Science & Mathematics

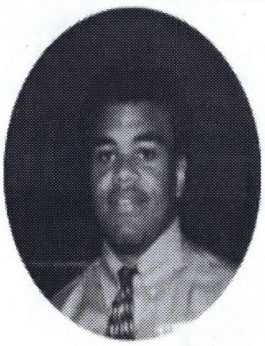
Discipline: Computer Science
Institution: South Carolina State University

Research Institution: Spallation Neutron Source, Oak Ridge Tennessee

Research Mentor: Dr. John Galambos

Error Analysis of the SNS Drift

The Spallation Neutron Source is a major DOE construction project for the generation of an intense pulsed source of neutrons. A high energy (1 GeV) proton beam is used to produce the neutrons, and the protons are accelerated by a linear accelerator. A concern in the linear accelerator is keeping the beam on axis, minimizing the beam radial offset due to manufacturing imperfections. To accomplish this, beam position monitors (which detect the beam offset) and correcting magnets are used to reestablish the beam near its centerline orbit. With the aid of computer software, this study shows that with a proper choice of the corrector and BMP locations, much of the beam orbit error can be corrected with reasonable magnetic fields in the corrector magnets.



Christopher Allen

Second Place" Computer Science & Mathematics

Discipline: Computer Science

Institution: South Carolina State University

Research Institution: Spallation Neutron Source, Oak Ridge, TN

Research Mentor: Dr. Daniel Ciarlette

Java Network Programming Query System

The development of a Query System that would allow Network Administrations to maintain hardware remotely and efficiently was an innovative, but needed tool for the Spallation Neutron Source's Information Technology Department. The Java programming language was used to implement the theory of having a single application that could manage several systems or an entire network Administrator's maintenance of hardware and possible network vulnerabilities to computer hackers. The program will allow the administrators to execute several different types of queries that can help determine valuable information about the network. For example, a Ping (Packet Internet Gopher) which, will determine what systems are currently running on the system can be quite useful in observing how many hosts are logged. These observations are important in determining how the efficiency levels vary on the network.

Winning Abstracts

Delphine Felder

"First Place" Chemistry & Physics

Discipline: Chemistry

Institution: Voorhees College

Institution Research: Medical University of South Carolina

Research Mentor: Dr. Patrick Kennerly

Methylphenidate Congeners as Cocaine Treatment

Cocaine abuse remains a serious public health problem and serves as a vector to AIDS, hepatitis, and tuberculosis. There has been no effective development of a drug that an suppress cocaine craving to prevent relapse. However, animal studies have shown that some dopaminergic agonists such as tropane dopamine transporter (DAT) inhibitors CFT and PTT can block cocaine self-administration without producing other abuse-like behaviors. In that methylphenidate and cocaine both act as DAT inhibitors and are similar in molecular structure, derivatives of methylphenidate will be synthesized and tested for possible treatment in Cocaine abuse.

LaFaith Miller

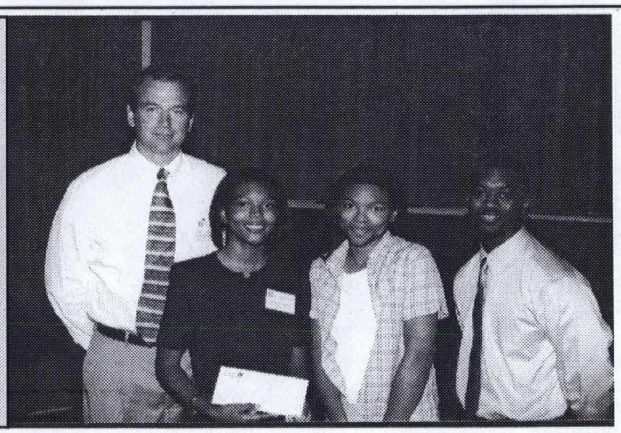
"Second Place" Chemistry & Physics

Discipline: Chemistry

Institution: University of South Carolina

Institution Research: University South Carolina

Research Mentor: Dr. Roy E. Wuthier



Fusarochromanone, a Potent Ant-Angiogenic Agent and Effective Cancer-Treatment Drug

Angiogenesis is the formation of new blood vessels (capillaries) from preexisting vessels. It involves the proliferation of capillary endothelial cells and occurs in response to chemical signals from a part of the body that shows a need for more oxygen. Fusarochromanone ((FC-101) blocks endothelial cells from receiving the signal to form new vasculature. FC-101 is potentially more effective than other treatments because it can be taken as a pill by mouth or administered intraperitoneally, and is much less toxic than currently used chemotherapeutic agents. We are developing better methods of purifying FC-101, optimizing each step in the purification process. Examining various extraction methods, we have found that the contact time between extracting solvent and rice culture can be reduced to two hours, compared to sixteen hours previously used. We also discovered that while particle size does effect extraction, under the conditions currently used this is not a major factor. In addition, we found that while pretreatment of the rice culture with water enhances the efficacy of methanol, the length of pretreatment time can be reduced to only a minimal waiting time.

Winning Abstracts

Troy Green

"First Place" Engineering

Discipline: Engineering

Institution: University of South Carolina

Institution Research: USDA -
Agricultural Research Service
Watkinsville, Georgia

Research Mentor: Dr. Dinku Endale

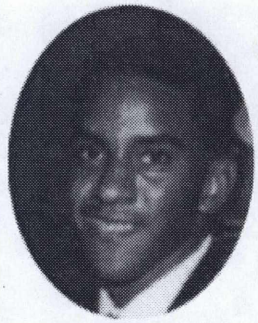
Impact of Tillage and Fertilizer Treatments on Cotton Yield and Water Quality

The purpose of this research was to compare combinations of poultry litter versus chemical fertilizer and conventional tillage versus no tillage on surface and sub-surface movement of nutrients is a cotton production system as well as cotton yield. Through this research, we determine how sustainable cotton production is under the contrasting conditions in the southern Piedmont. What are the yields? What are the economical returns? What can farmers do to preserve the nutrients of the soil? The research seeks answers to these questions.

There are twelve 30 ft. x 100ft. plots of cotton consisting of four combinations. The combinations are 1) conventional tillage and chemical fertilizer (CTCF), (2) conventional tillage and poultry litter (CTPL), (3) no tillage and chemical fertilizer (NTCF), and (4) no tillage and poultry litter (NTPL). Each combination is replicated three times for a total of twelve plots. The water quality data is measured through runoff and drainage samples.

My duties consisted of programming and monitoring water samplers for runoff and drainage collection. Soil moisture was monitored from each plot. After each rainfall event, the amount of rain was measured manually from rain gauges that were set in each plot. The data from the runoff was monitored through dataloggers. I was also responsible for downloading the computer runoff data for each plot. I was also responsible for maintenance duties consisting of replanting cotton, setting the alternate irrigation system, designing rain gauge holders, and keeping sample bottles cleaned and prepared for the next rainfall. Due to dry conditions, there were no runoff and drainage events. But my duty also consisted of collecting samples if there were such events.

Winning Abstracts



Guy Mentor

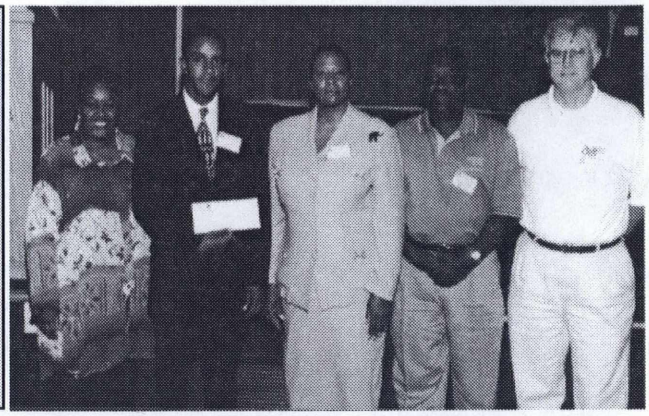
"Second Place" Engineering

Discipline: Engineering

Institution: South Carolina State University

Research Institution: USDA- Agricultural Research Services, Clemson University

Research Mentor: Dr. Robert Harrison



Effect of Fiber Length on Processing Performance

The textile industry is interested in the contribution that fiber length has on processing performance. Textile mills generally perform a yearly adjustment in machine settings to reflect the change in fiber properties for the particular crop year. In an effort to minimize the weight variation per incremental length, a series of tests were conducted. We were able to use the Advanced Fiber Information System (AFIS) machine to determine the average length of a "long" and a "short" cotton and then use this information to properly set the drafting zone distance for processing. Thirty test with ten repetitions per test were conducted on the two cotton types. From these, we were able to conclude that the AFS had a tendency to shorten or damage the average length of the fibers due to the aggressiveness of the pinned and perforated cylinder. This information could lead to short draft settings. We have an opportunity to provide information to the textile industry that will improve the processing quality of cotton.

Tantiana Burns

"First Place" Biology

Discipline: Biological Sciences
Institution: South Carolina State University

Research Institution: USDA-Agricultural Research Service Athens, Georgia

Research Mentor: Dr. Kenneth Voss

The Nephrotoxic And Other Effects of Fumonisin Producing Fungi In Castrated and Non-Castrated Male Rats

Fumonisin are produce by the fungus Fusarium moniliforme. Both fumonisins and the fungus are commonly found in corn worldwide. They are toxic to farm animals, cause cancer in laboratory rodents, and are suspected of causing esophageal cancer in humans in some parts of the world. There are many species- and sex-related differences in the toxic response to fumonisins. In rats, males are significantly more susceptible to kidney toxicity than females. Furthermore, in a 2- year study, fumonisin B1 cause kidney cancer in male, but not, female rats. To investigate if hormones play a role in modifying toxicity, castrated (CR) and non-castrated (NCR) male rats are being fed diets containing high (about 366 ppm) or low levels (nominally about 60 ppm) of fumonisins provided by F. moniliforme culture material. Additional CR and NCR groups are being fed diets without culture material. To assess toxicity, kidney, liver, and heart weights are being determined in 5 rats per group after 4 days, 1 week and 2 weeks of exposure. These tissues are also being microscopically examined for the severity of fumonisins related effects therein. Determining the factors, such as hormones, which modulate species-and sex-specific responses to fumonisins are important for assessing the risk of these compounds to human health.

Winning Abstracts

Octavia Smalls

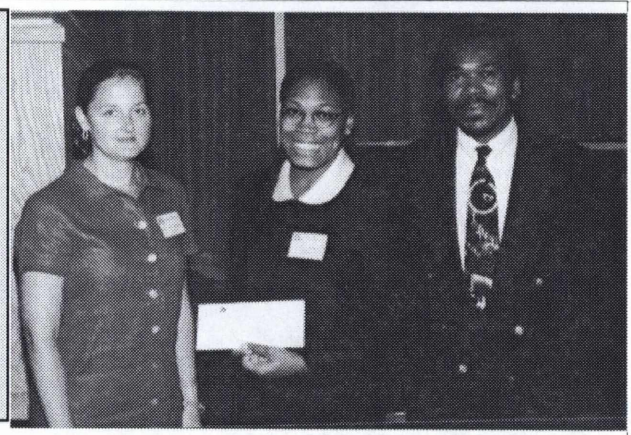
"Second Place" Biology

Discipline: Biological Sciences

Institution: Claflin University

Research Institution: USC School of Medicine

Research Mentor: Dr. Clarke Millete



Localizaton of L-selectin and a-actinin in Sertoll Cells and Sertoll Cell Lines by Immunoflourescence Microscopy

Sertoli cells are the true epithelial cells of the tastia. They are columnar in shape and rest on the ball lamine. The sertoli cell gives structural organization to the seminiferous tubes as they extend through the full thickness of the stem epithilium . Sertoli cells support the development of germ cells through direct membrane interactions mediated by cell adhesion molecules. L-selectin is a member of the Selectin family of cell adhesion molecules. L-selectin mediates both lankocyte rolling –adhesin to endotheleum and normal lymphocyte migration.

Benitra Johnson

"Third Place" Biology

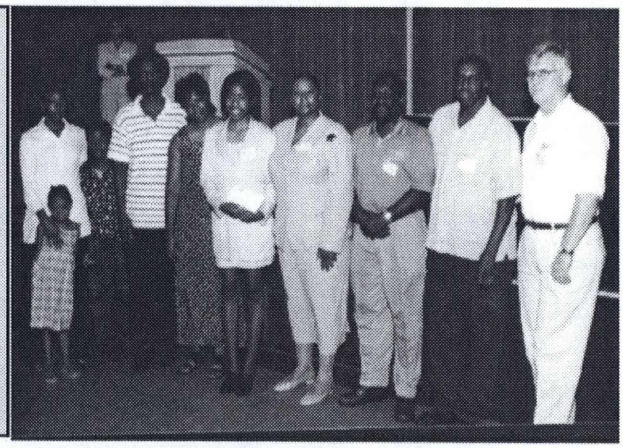
Discipline: Biological Sciences

Institution: South Carolina State University

Research Institution: USDA-Agricultural

Research Service, Athens, Georgia

Research Mentor: Dr. Charles Bacon



UV-Mutagenesis of a Bacterium for Removal of its Biocontrol Properties

The biocontrol bacterium Bacillus mojavensis is an endophyte and is used to prevent the growth of fungi inside plants or reduce the production of mycotoxin from the fungus Fasarium moniliforme. The manner by which this inhibition is done is unknown but cultural evidence suggests that an inhibitor is produced that prevents the growth of fungi that also grow as endophytes. Since the chemical nature of the substance is unknown, development of a mutant lacking the ability to produce the inhibitor (s) is desired in order to determine if the inhibitor is produce in planta preventing the growth of fungi, or does inhibition work by competitive exclusionary principles. Approximately 250 UV mutants were generated and screened for both qualitative and quantitative mutations to fungal inhibition using in vitro culture techniques, and all suspect mutants tested for fungal growth relative to the wild-type B. mojavensis.

Research Participants

South Carolina Alliance for Minority Participation

AMP

Carl Lebby University of South Carolina, Engineering Research Mentor: Dr. Adrienne Cooper, University of South Carolina "Various Design Projects For the Study and Treatment of Wastewater"	**Sharmina Miller** Voorhees College, Geology Research Mentor: Dr. Michael Howell, University of South Carolina "Using oxygen and carbon isotopes to determine surface and bottom water conditions at the Strait of Sicily, Mediterranean Sea"
Natalia Johnson Claflin University, Biology Research Mentor: Dr. Ajoy Chakrabarti South Carolina State University "The Effect of Diverse pH on the Germination and Growth of Crop Seed Species"	**Charlitrice Bridges** Benedict College, Computer Science Research Mentor: Dr. Roger Dougal, University of South Carolina "Visualization as a Product of Simulation"
Guy Mentor South Carolina State University, Engineering Research Mentor: Dr. Robert Harrison, USDA-ARS Clemson University "Effect of Fiber Length on Processing Performance"	**LaFaith C. Miller** University of South Carolina, Chemistry Research Mentor: Dr. Roy E. Wuthier, University of South Carolina "Fusarochromanone, a Potent Anti-Angiogenic Agent and Effective Cancer Treatment Drug"
Cortney J. Young Voorhees College, Biology Research Mentor: Dr. David Scott South Carolina State University "Genetic Analysis of Fruit Fly Pheromones"	**Benitra T. Johnson** South Carolina State University, Biology Research Mentor: Dr. Charles Bacon, USDA-ARS, Athens, GA "UV-Mutagenesis of a Bacterium for Removal of its Biocontrol Properties"

Research Participants

South Carolina Alliance for Minority Participation

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Reginald J. Prince Voorhees College, Computer Science Research Mentor: Dr. Jon Lockwood, Westinghouse Savannah River Site "WRTS and ME"	**Endia C. Johnson** College of Charleston, Biology Research Mentor: Dr. Terrence O'Brien MD, Medical University of South Carolina "Transfecting Adult Cardiomocytes using Adenoviral Gene Deliver Vectors
Omolara Olanihum Voorhees College, Biology Research Mentor: Dr. Robert G. Upchurch, USDA-ARS, North Carolina State University "Genetic Transformation of Cercospora Kikuchii"	**Candice S. Young** Voorhees College, Biology Research Mentor: Dr. Kent O. Burkey, USDA-ARS, North Carolina State University "Ozone is a Phytotoxic Air Pollutant that Reduce Plant Growth and Yield"
L. Tameika Johnson University of South Carolina, Engineering Research Mentor: Dr. Mike Matthews, University of South Carolina "Destruction of Polychlorinated Compounds using Electrochemical Oxidation"	**Andedra L. Edwards** Benedict College, Computer Science Research Mentor: Dr. Sandip Dutta, University of South Carolina "Programming with Visual Basic"
Amario Bennett University of South Carolina, Biology Research Mentor: Dr. Charles Bacon and Anthony Glenn, USDA-ARS, Athens, GA "Genetic analysis of fungal spore production by Fusarium Moniliforme"	**Annette D. Davis** Benedict College, Biology Research Mentor: Dr. Peter Mente, USDA-ARS, North Carolina State University "Cell Viability of Cartilage Following an Injury"

Research Participants

South Carolina Alliance for Minority Participation

AMP

Michael Baker Voorhees College, Computer Science Research Mentor: Dr. John Foulk, USDA –ARS, Clemson University " Favimat Analysis of Single Cotton Fibers"	**Delphine Felder** Voorhees College, Chemistry Research Mentor: Dr. Patrick Kennerly, Medical University of South Carolina "Methylphenidate Congeners as Cocaine Treatment"
Angela E. Davis Benedict College, Biology Research Mentor: Dr. Harold Pattee, USDA-ARS, North Carolina State University "Evaluation of Selected Peanut Genotypes for Oil Content"	**Candice Jamison** Voorhees College, Biology Research Mentor: Dr. Sharon Nicodemus, Westinghouse Savannah River Site "Discharge Monitoring Reports"
Troy K. Green University of South Carolina, Engineering Research Mentor: Dr. Dinku Endale, USDA-ARS Watkinsville GA "Impact of Tillage and Fertilizer Treatments on Cotton Yield and Water Quality"	**Tantiana Burns** South Carolina State University, Biology Research Mentor: Dr. Kenneth Voss, USDA-ARS, Athens, GA "The Nephrotoxic And Other Effect of Fumonisin Producing Fungi In Castrated and Non-Castrated Male Rats"
Bradford Gillens South Carolina State University, Biology Research Mentor: Dr. W. H. Morrison, USDA-ARS, Athens, GA " Determining Whether Residual Wax has an Effect on Flax Fibers"	**L'Toia Risher** Claflin University, Chemistry Research Mentor: Dr.Darren Pearson, Claflin University "Synthesis of Isonitrile Endgroups for Molecular Scale Electronic Controllers"

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Kristi Owens College of Charleston, Physics Research Mentor: Dr. Bernard L. Lindner, College of Charleston "Improving Hurricane Warning Effectiveness"	**Gekia Gant** Claflin College, Computer Science Research Mentor: Dr. Bob P. Miller, Westinghouse Savannah River Site "Increasing the Deployment Rate in Migrating from Windows 95 to Windows 98"
Ramona D. West Benedict College , Chemistry Research Mentor: Dr. Sandra E. Kays, USDA-ARS, Athens, GA "Measurement of Dietary Fiber in Two Agricultural Crops"	**Miguel Rodriguez** University of South Carolina, Electrical Engineering Research Mentor: Dr. Jerry L. Hudgins and Dr. Enrico Santi, University of South Carolina "Insulated Gate Bipolar Transistor Switching Characteristics at Various Temperatures"
Aleck F. Williams, Jr. Claflin University, Biology Research Mentor: Dr. Bert Ely, University of South Carolina "Use of PCR-RFLP Assays to Distinguish Genetic Variation Among Striped Bass and White Bass Alleles"	**Asha Bailey** Clemson University, Biology Research Mentor: Dr. Andrew S. Mount, Clemson University "Model System for Nano-fabrication of Ceramic Composites with Application to Medical Appliances"
Christopher Allen South Carolina State University, Computer Science Research Mentor: Dr. Daniel Ciarlette, Spallation Neutron Source "Java Network Programming Query System"	**Tomika Dicks** Claflin University, Computer Science Research Mentor: Mal Collins, Westinghouse Savannah River Site "A World of Opportunity"

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Sheila Jackson Benedict College, Biology Research Mentor: Dr. Danny Akin, USDA-ARS, Athens, GA "Determining the Rettability of Flax Fibers for Linen"	**Omkar Jani** University of South Carolina, Engineering Research Mentor: Dr. T.S. Sudarshan, University of South Carolina "Defect Mapping System"
Brooks McPhail South Carolina State University, Chemistry Research Mentor: Dr. Frederick Meadows, USDA-ARS, Athens, GA "Optimization of Experimental Conditions for NMR Spectral Analysis of Starch"	**Brian Davis** South Carolina State University, Computer Science Research Mentor: Dr. John Galambos, Spallation Neutron Source "Error Analysis of the SNS Drift Tube Linac"
Xerese McPhail Claflin University, Computer Science Research Mentor: Mal Collins, Westinghouse Savannah River Site	**Joseph Morris** University of South Carolina, Engineering Research Mentor: Dr. N.K. Swain, South Carolina State University "Computer Based Virtual Engineering Laboratory (CBVEL) and Engineering Technology Education"
Octavia Smalls Claflin University, Biology Research Mentor: Dr. Clarke Millete, University of South Carolina-Medical School "Localization of L-selectin and a-actinin in Sertoll Cells and Sertoll Cell Lines by Immunofluorescence Microscopy"	**Lakesha A. Grant** Voorhees College, Biology Research Mentor: Dr. Timothy Mousseau, University of South Carolina "Genetic Variation in Male Body Size"
Denita Williams Research Mentor: Dr. Ida E. Yates, USDA-ARS, Athens GA "A Novel Fungicide Controls Growth of *Fusarium monillforme* Collected from Diverse Geographic Areas"	**Shay Cunningham** South Carolina State University, Biology Research Mentor: Dr. Charles Bacon, USDA-ARS, Athens GA "Detoxification of the Mycotoxin Fumonisin by Bacillus Species"

Snapshots of the SCAMP Family

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