RESEARCH CAPABILITIES STATEMENT

QUICK FACTS

ACADEMICS

➢ As South Carolina’s only public, historically black college and university (HBCU), there are several programs unique to SC State University (SC State).

➢ The only Bachelor of Science program in nuclear engineering in South Carolina and at an HBCU.

➢ The only Master of Science degree in transportation and the only Master of Business Administration degree with a concentration in agribusiness in South Carolina.

➢ The only Doctor of Education degree in the state with a concentration in educational administration. SC State is ranked third in the nation in graduating minorities with the doctor of education degree.

➢ A Bachelor of Science degree in physics with an option or concentration in Medical Physics. Graduates of this program are prepared to enter employment in the field or go on to graduate school.

➢ A new Master of Science degree in biorobotics and biofabrication.

➢ A Top 10 ranking for most enrolled ROTC cadets (No. 1 HBCU) and No. 1 ranking in social mobility for three years (2006, 2007, and 2009) from Washington Monthly.

➢ The only HBCU to be ranked as an over performing College in the U.S. and No 5. Among national public HBCU’s by U.S. News and World Report.

➢ SC State’s Beta Gamma Sigma chapter was named an Exemplary Chapter International Honor Society in fall 2012.

➢ Identified as the exclusive HBCU for research in the state of South Carolina by Forbes Magazine.

FACILITIES

➢ SC State consists of approximately 107 buildings on 160 acres of land on its main campus in Orangeburg, and an additional 267 acres at Camp Harry E. Daniels in Elloree, S.C.

➢ The new Engineering and Computer Science Complex opens in early 2013. The 24.5 million, 86,500-square-foot complex will feature innovative classrooms, research centers, laboratories, offices and other academic support spaces.

➢ The James E. Clyburn Center conducts research and trains skilled workers, especially minority workers, in the transportation industry.

➢ SC State has the only undergraduate environmental science field station in the nation.

➢ SC State is the only HBCU in the country with an interdisciplinary art museum and planetarium in one facility, the I.P. Stanback Museum and Planetarium.

➢ The Leroy Davis Sr. Science and Research Complex, an extension of Hodge Hall, is a recently constructed state-of-the-art facility housing the Department of Biology and Physical Sciences. The Leroy Davis, Dr. Science and Research Complex opened in January 2011.
Selected SC State Centers and Research Units

- Environmental Field Station
- SC State’s 1890 Research and Extension
  - The Center for Agricultural Systems, Food Production, Safety and Security
  - The Center for Obesity, Nutrition, Health and Wellness
- The Center for Energy Studies
- SC State’s Center for NASA Research and Technology
- James E. Clyburn University Transportation Center
- State Small Business Development Center
About South Carolina State University

South Carolina State University’s land grant mission of education, research, and service provides the basic foundation for which its faculty and staff conduct research, scholarship, and creative activities. The University supports the basic notion that discovery and dissemination of new knowledge and the creation of scholarly works energizes its intellectual environment and places it in a unique position to carry out research and educational programs at the highest possible standards. Thus, the University establishes as its major research focus areas, the following:

- Agricultural and Food Safety and Agribusiness
- Business and Economic Development
- Education and Outreach
- Energy Security and Environmental Management
- Health Disparities and Public Health
- Homeland Security and National Security
- Humanities and the Arts
- Science and Technology
- Transportation

South Carolina State University depends on a forceful and growing innovative endeavor as a means to accomplish its aspiration to be recognized among the eminent public teaching and research universities in South Carolina and the nation.

The fundamental philosophy and core values of South Carolina State University are: Learning, Excellence, Commitment, Responsibility, and Integrity.

Thus, the University has built and maintains a high quality, research-oriented academic atmosphere that promotes excellence in research, scholarship, and creative endeavors.
About South Carolina State University - Continue

This atmosphere:

- Fosters faculty/staff participation in research and other scholarly work
- Supports the core values of the University
- Promotes the educational objectives of the University by advancing, nurturing, and conducting research (including contract research) in the agricultural sciences, transportation, health and food science systems, science and technology, education, business and economic development, humanities and the arts.
- Provides programmatic and administrative structures to ensure that faculty, staff, and students are able to conduct cutting edge research in the most cost-effective and proficient manner.

The extensiveness and complexity of knowledge available from South Carolina State University (SC State) faculty and staff are attractive to many educational leaders and researchers from across the country. The research facilities are extensive, for example the University has an established Basic Elemental Analysis Laboratory (BEAL) with state-of-the-art equipment that has the capacity to perform a wide range of analytical testing.

SC State emphasizes integration of research, student involvement, and dissemination of knowledge, which is promoted by workshops and seminars, and the active participation of both faculty/staff and students through publications and the attendance at national and international conferences. The University is proud of its success in fostering partnerships and cooperative relationships with local entities and governmental agencies, both state and federal.

South Carolina State University continues to expand its research opportunities and capabilities, and therefore, encourages faculty/staff interactions with private sectors and governmental entities. Grants and contracts from these entities provide an important source of funds. These grants and contracts allow the University to enhance its infrastructure, provide quality educational experiences and employment for its faculty/staff and students, and expand its academic programs. Thus, the University’s primary goal is to support and advance research, scholarship, and creative activities in the specific colleges/school and research units at the university; The College of Business and Applied Professional Sciences, The College of Education Humanities Social Sciences, The College of Science Mathematics and Engineering Technology, The School of Graduate Studies, The 1890 Research and Extension division, The Environmental Science Field Station, and The James E. Clyburn University Transportation Center. The specific research capacities in aforementioned colleges/units are presented on the following pages in more detail.
THE COLLEGE of BUSINESS and APPLIED PROFESSIONAL SCIENCES

The mission of the College of Business and Applied Professional Sciences is to produce graduates who are competent in their chosen areas of study and are prepared to function effectively as professionals in the disciplines of business administration, accounting, agribusiness, economics, family and consumer sciences, health sciences, (nursing, health & physical education, speech pathology & audiology) and military science. The College provides quality management education and leadership development to produce competitive graduates for a global and diverse environment. The overall success in accomplishing this mission will be measured by the enhancement of the College's reputation among its peers and diverse stakeholders. To achieve fully the mission of the land-grant institution, the College will devote its expertise and resources to providing academic and practical experiences, conducting research, and providing outreach to its constituent groups.
# RESEARCH CAPABILITIES STATEMENT

## AGRICULTURAL and FOOD SAFETY and AGRIBUSINESS

### Research Area of Interest:
- Agribusiness Entrepreneurship
- Agricultural Credit/Loan Analysis
- Food Consumption/Analysis/Quality/Safety/Health
- Nutritional Science
- Evaluation of Agricultural Land Technologies
- Marketability & Adaptability of Water Technology for Agriculture

### Specific Research and Educational Projects:
- Can Export Credit Guarantee Enhance Small Agricultural Business and Farmers in S.C. to become More competitive
- A Strategy for Internationalizing Agriculture Programs: Preparing Graduates for Global Competency in Building Agriculture Competitiveness
- Carolina Agricultural Radio Extension (C.A. R. E)
RESEARCH CAPABILITIES STATEMENT

BUSINESS and ECONOMIC DEVELOPMENT

Research Area of Interest:

- Small Business Development
- Technology Transfer
- Foreign Currency Translation
- Speech/Hearing Screening and Treatment

Specific Research and Educational Projects:

- Rural Entrepreneurial Outreach Initiative
- Small Business Development Center - Consortium Federal/State
- Path to Financial Independence
- SBDC Consortium Program FY13 (Department of Commerce)
- Quantifying Economic Impact of Climate Change in the U.S. Southeast Coastal Region

HEALTH DISPARITIES

Research Area of Interest:

- Health and Wellness
- Speech/Hearing Screening and Treatment

Specific Research and Educational Projects:

- Health Sciences / Speech Pathology and Audiology (CREATE)
- Healthy South Carolina Initiative
- Socio-Economic Impact of Childhood Obesity: Cost Effective Preventive Strategies

THE COLLEGE of BUSINESS and APPLIED PROFESSIONAL SCIENCES
EDUCATION and OUTREACH

Research Area of Interest:

- Nursing Education
- Tax Preparation
- Improving Teacher Quality
- Rehabilitation

Specific Research and Educational Projects:

- Socio-Economic Impact of Childhood Obesity: Cost Effective Preventive Strategies
- Personnel Development to Improve Services and Results for Children with Disabilities
- Combined Priority for Personnel Development (CPPD)
- Personnel Development to Improve Services and Results for Children with Disabilities
- Enhancing the Disaster Resilience for Rural Communities through Better Disaster Preparedness and Improved Emergency Response
THE COLLEGE of EDUCATION, HUMANITIES SOCIAL SCIENCES

The College of Education, Humanities mission is to offer comprehensive programs of instruction, as well as other educational and professional experiences that contribute to the total development of the individual. This heterogeneous group of disciplines embraces the development of critical thinking, fluent expression in writing and speech sensitivity to ethical and aesthetic standards, a knowledge and understanding of history and culture, and a commitment to the preparation of educational and professional personnel.

The College of Education, Humanities, and Social Sciences consists of five departments: Education, English and Modern Languages, Human Services, Social Sciences, and Visual and Performing Arts. Together, the departments offer approximately 30 majors, 10 of which are offered in conjunction with departments in other colleges. In addition, each department within this unit provides general education courses.
RESEARCH CAPABILITIES STATEMENT

EDUCATION and OUTREACH

Research Area of Interest:

- Assessment /Evaluation of Criminal Justice Practices
- Conflict Resolution Study Among At-Risk Youth
- Curriculum Development & Enhancement
- Distance Learning/Continuing Education
- Ethics
- Geriatric Education
- Handicapped/Disabled Student & Employee Education
- High Level Thinking Skills, Behavior Modification & Learning Style Research in Students

Specific Research and Educational Projects:

- South Carolina State University Talent Search Project
- Upward Bound Math and Science Program
- 21st Century Community Leaners
- Student Support Services
- Centers for the Re-Education and Advancement of Teachers in Special Education (Project CREATE)
- Rehabilitation Personnel Preparation Program (Focus C)
- Establishing an Alliance among 1890 Family and Consumer Sciences Units to Deliver Programs via Distance Education
- Job Development and Placement to Individuals with Disabilities
- RSA Comprehensive System of Personnel Development (CSPD)
- Personnel Development to Improve Services and Results for Children with Disabilities
- Advocates for Youth
- Rehabilitation Service Administration Job Development and Placement
- Gaining Early Awareness & Readiness Undergrad. Program
- Call Me MISTER
- National Council of Accrediting Teacher Education (NCATE) Grant
- Individuals with Disabilities Education Improvement Act (IDEA)

THE COLLEGE of EDUCATION, HUMANITIES SOCIAL SCIENCES
HEALTH DISPARITIES

Research Area of Interest:
- Community Development/Rural Health Education & Outreach
- Geriatric Education
- Handicapped/Disabled Student & Employee Education

Specific Research and Educational Projects:
- Center on Health Outcomes Research and Capacity Building for Underserved Populations with Spinal Cord Injury and Traumatic Brain Injury
- Center for Advancement on Disability and Economic Development – Sub-agreement with Langston University
- Healthy South Carolina Initiative
- Fresh Fruit and Vegetable Program

HUMANITIES AND THE ARTS

Research Area of Interest:
- Assessment/Evaluation of Criminal Justice Practices
- Ethics
- American Politics
- American Civil Rights
- Faculty Development
- Culture Diversity

Specific Research and Educational Projects:
- The Abolitionist Movement's Involvement in American Politics
- Understanding Culture to Connect Poor African American Children with Academic Achievement in Rural South Carolina
- A History of Prison Architecture and Punishment in Colonial Senegal
- Created Equal: American's Civil Rights Struggle
- NEH HBCU Faculty Award Grant
- NEH Fellowship Award Grant
THE COLLEGE of SCIENCE, MATHEMATICS & ENGINEERING TECHNOLOGY

The mission of the College of Science, Mathematics and Engineering Technology is to produce scientists, mathematicians, engineers and engineering technologists who are highly skilled, competent, and well prepared to enter professional careers in the public and private sector and to pursue degrees beyond the baccalaureate level in professional or graduate school. The College seeks to serve the needs of the community, state, and nation by providing quality programs in a caring, nurturing, interdisciplinary environment that fosters academic excellence in the engineering technology, science and mathematics disciplines. The College comprised the following departments:

- The Department Biological & Physical Sciences (Biology, Chemistry and Physics)
- The Department Civil and Mechanical Engineering Technology
- The Department of Industrial and Electrical Engineering Technology
- The Nuclear Engineering
- The Department of Mathematics and Computer Science
RESEARCH CAPABILITIES STATEMENT

ENERGY SECURITY and ENVIRONMENTAL MANAGEMENT

Research Area of Interest:

- Biomass Research
- Environmental & Ecological Chemistry
- Environmental Engineering
- Environmental Science & Technology
- Environmental Remediation
- Hydrogen Storage and Production

Specific Research and Educational Projects:

- Detection of Sphingomonas Strains for use in Polycyclic Aromatic Hydrocarbon Degradation
- Enhancement of Environmental Remediation Monitoring and Student Training at Savannah River Site
- Analyze Fission Product from Nuclear Processes and Technology
- Analysis of Radioisotopes in Natural Water
- Detection of the Fission Products from Fukushima Nuclear Accident
- Spanish Moss as a Biomonitor for the Airborne Radionuclide’s
- The Study of Water Quality
- Improved Environmental Management and Computational Sciences Project at SC State University
- Safety Impact of Road Transportation of Biomass (non-hazardous), biofuel and other Related Farm Products
- Biocatalytic Production of Hydrogen as Fuel From Agricultural Bio-mass
- Complex Metal Hydride (H₂) Storage Material and Engineering Systems Studies
- Proton Exchange Membrane Fuel Cell Studies
- Measurement of Radon and Thoron Gases with RAD7
- Separation of a Natural Black Material with Abnormally High Radioactivity
- Communicating Research and Extension project Outcomes to SCSU Community and Other Stakeholders

THE COLLEGE of SCIENCE, MATHEMATICS & ENGINEERING
Research Area of Interest:

- Cyber Security
- Materials, Manufacturing and Sensors Research
- Modeling and Simulation of Flexible Robot Manipulator with a Prismatic Joint,"
- Modeling and Computational Science
- Sensor Research

Specific Research and Educational Projects:

- Nuclear Engineering
- Enhancing Participation of a Pilot Program in Radiochemistry (Radiological analysis)
- Radiochemistry/Health Physics/Nuclear Engineering
- The Synthesis of Organic Scintillators for Homeland Security Applications
- The Expansion of the Analytical National Testing and Research Center for Hazardous Material Transportation Safety
RESEARCH CAPABILITIES STATEMENT

RESEARCH CAPABILITIES IN SCIENCE AND TECHNOLOGY

- Algorithms Test & Development Analysis
- Coherent-Based Simple Dynamic Equivalent Research
- Composite Materials Manufacturing Technologies
- Computer Graphics & Aided Engineering Design & Analysis
- Expert systems/Fuzzy Logic/Intelligent Control
- Fluid Dynamics
- Geotechnical Engineering
- Bio-robotics and Bio-fabrication
  - medical physiology,
  - neuroscience,
  - rehabilitation physiology,
  - intelligent robotics, and
  - bio-cybernetics
- Computer Graphics & Aided Engineering Design & Analysis
- Computer Interfacing, Data Acquisition & Physics Education
- Community Development
- SC Cancer Disparities Research Center

THE COLLEGE of SCIENCE, MATHEMATICS & ENGINEERING
The South Carolina General Assembly authorized South Carolina State College to offer graduate work in 1946. Stemming from its strong 1890 land-grant tradition, a Graduate Division grew into a School of Graduate Studies, which produced its first degree graduate in 1948 with a Master of Science in Mathematics Education. In 1959, when the M.S. program was designated the Master of Education (M.Ed.) program, more than half of the sixteen subject-matter areas were directly related to agriculture and agronomy. Since that time, the School of Graduate Studies has expanded to offer 19 different subject matter emphases which comprise 12 degree programs: an Ed.D., and Ed.S. in Educational Administration, two M.A. programs, one M.A.T, four M.Ed., and three M.S. programs. In 1994, the School of Graduate Studies was reorganized into the Graduate Studies Program under the direction of the associate vice president for Research and Graduate Studies. In 1997, the unit was renamed School of Graduate Studies.

Until 1972, when the M.A. degree in Rehabilitation Counseling was approved, all programs and courses were designed for teacher preparation and subsequent certification by the South Carolina State Department of Education. Additional variety was added in 1974 with approval of the M.A. program in Speech Pathology and Audiology. Although professional in nature, these new programs brought a renewed emphasis on field inquiry methods in research.

The most rapid period of program growth in the School of Graduate Studies was from 1979 to 1983 when the Master of Science degree programs in Nutritional Sciences, Agribusiness, and Individual and Family Development were approved and the Ed.D. and Ed.S. advanced degree programs were added. The advent of these research-oriented programs significantly altered the goals and directions of graduate education at South Carolina State University and they were measurable influences in its advancement to university status.
RESEARCH CAPABILITIES STATEMENT

Research Conducted in Specific Disciplines:

- How Two High-Poverty South Carolina Elementary Schools Sustained Excellent Absolute Ratings for eleven Consecutive Years: An Analysis
- The Leading Focused Teaching Model for Acquisition Lessons and Its Impact on Sixth-Grade Reading Scores on an Upstate South Carolina School District
- A Comparative Analysis of School Scheduling as it Relates to Mathematics Achievement of Fifth-Grade Students in an Urban School District in South Carolina
- Teachers Perceptions and Principal Leadership Behaviors on Teacher Morale in High and Low Performing Elementary Schools in South Carolina
- School Principals’ Personality Types and Instructional Leadership Practices in Selected Distinguished and Non-distinguished Title One Elementary Schools in South Carolina
- Comparative Study of Cooperative and Traditional Learning on the Academic Achievement of Third Grade Students in Selected Rural School Districts in Northeast South Carolina
- A Comparison of Teacher Classroom Management Practices and Presage Variables on High and Low Performing Elementary Schools
- A Case Study of the Academic Achievement of African American Males in Single-Sex Classrooms in Rural South Carolina
- A Correlational Study of School and Teacher Characteristics as it relates to the Academic Performance of Public Elementary Schools in South Carolina
- The Impact of Computer Assisted Instruction on Mathematics Achievement of Underachieving Fifth-Grade Students
- Teachers’ Perceptions of their Self-Efficacy and Effects of Principal Leadership Practices on Self-Efficacy Beliefs in Low and High-Performing Elementary Schools in South Carolina
- The Impact of the Multiple Attempts at Mastery Philosophy on the Academic Achievement and Behavior of Elementary School
- 2012-2013 Gifted and Talented Graduate Course Grant Program

THE SCHOOL of GRADUATE STUDIES
The 1890 Research & Extension Program at SC State University offers an important public service for rural and urban limited-resource families who are in need of the latest research-based scientific knowledge, sustainable practices in agriculture, financial management, business development, parenting skills, health and nutrition, and computer skills. In partnership with the U.S. Department of Agriculture and state and local government, 1890 programs are making a difference in South Carolina communities and changing lives.

The 1890 Research Program funds several research projects focusing on agriculture and production systems; youth and family development; rural life and rural opportunities and environment, health and human nutrition. These projects enable the university to demonstrate its unique capability for understanding and addressing problems, concerns and issues affecting the quality of life of disadvantaged communities.

The 1890 Extension Program provides an outreach perspective to help rural limited-resource clients improve their level and quality of living and to help them achieve their goals through wise resource management. Its focus areas include: 4-H youth development; adult leadership and community development; small farm assistance and outreach; environment and natural resources; family life; technology and data management; and nutrition, food safety and wellness.
RESEARCH CAPABILITIES STATEMENT

1890 Supported Research Projects in the Following Areas:

- Economic Impacts of International Trade and Domestic Policies on Southern Agriculture
- Investigating the Barriers to International Trade Faced by Small Scale Agribusiness Enterprises in South Carolina
- Impact of the Panama Canal Expansions on Corn Exports in the Southeastern Region of the United States
- Disaster Relief Supply Chain Optimization and Simulation for Rural Communities
- Lifestyle Intervention for Obese Pregnant Women in South Carolina: An Investigation of the Effects of Intervention on Health Outcomes in Infants
- Weight Training Effects on Elderly Diabetes Patients
- Implementing Physical Activity and Nutrition through the Use of Technology to Combat Overweight and Obesity in Elementary School Aged Children
- Effectiveness of Water Aerobic Exercise on Obesity and Diabetes Risk Factors in Pre-teen and Teenage Girls
- NAFTA, The Environment and State Competitiveness in Vegetable Production and Exports
- Combining Youth, Passion, and Resources for Environmental Science Studies (CYPRESS)
- An Impact Study of the Relationship Between Healthy Eating, Healthy Lifestyles and Cognitive/Academic Development in Adolescents in Rural South Carolina
- An Evaluation of A Rural Violence Prevention Program for Youth and Families: A Longitudinal Study in South Carolina and the Southeastern Region
RESEARCH CAPABILITIES STATEMENT

1890 Supported Research Projects in the Following Areas:

- The Impact of Culturally Relevant Teaching on Rural, African American Students Achievement
- Historical Patterns in the Formulation and Implementation of U.S. Nutrition Policies in South Carolina
- Political Participation, Representation, Mayoral Leadership, and the Distribution of Public Services in Rural Communities in South Carolina
- Investigations on DNA Damage in Diabetes Involving Glycoxidation Reactions
- The Determination of the Presence of Food-borne Pathogens in Poultry Products to Enhance Food Safety in Orangeburg County
- Development of a Food safety Laboratory Testing the Efficacy of Using Ozone and Probiotics to Inhibit Food-Borne Pathogens in Poultry and Meat
- Recycling of Waste Plastics into Fuel and Valuable Alternatives
- Appetite Control and Achievement Motivation in Relation to Obesity Avoidance in the Young Adult Population
- Environmental Remediation Investigation Using Sensor Technology and Contaminant Transport Modeling
- Automatic identification Technology Usage for Farm Produce Traceability
- A Computer Simulation Model for Livestock Emergency Response in South Carolina
- Investigations on DNA Damage Caused by Obesity and Diabetes
The James E. Clyburn University Transportation Center (JECUTC) at South Carolina State University has had noticeable success in the administration of all of its programs and is currently conducting applied research, education and technology transfer research and education programs.

- The University Transportation Center
- The Southern Rural Transportation Center
- The Environmental Policy Institute
- The National Summer Transportation Institute
- Web-Based Transportation Network Optimization Model in South Carolina (Dr. Jae-Dong Hong)

This research will develop a network model using Microsoft Excel with VBA to find the optimal way to transport products from suppliers to customers through various transhipment points in the State of South Carolina. The logistics network will consist of supplies, warehouses, distribution centers and retail outlets. VBA codes will be used to retrieve data from the database, develop a flexible network flow model, and run the Solver to find the optimal transporting routes, the amount of flow, and the corresponding total transportation costs.
RESEARCH CAPABILITIES STATEMENT

TRANSPORTATION

Research Area of Interest:

- Research
- Education
- Technology Transfer
- Educational Programs

The University Transportation Center
The Southern Rural Transportation Center
The Environmental Policy Institute
The National Summer Transportation Institute
The Field Station concept was proposed in 1995 by Dr. Ambrose O. Anoruo, a Professor at South Carolina State University, in a Capacity Building Grant that was funded by the USDA. Following the approval of the concept by DOE - Savannah River Operations Office to use Savannah River Site as site for the Field Station, the President of South Carolina State University, Dr. Leroy Davis invited regional Historically Black Colleges and Universities (HBCUs), underrepresented Institutions (MIs) and other majority institutions in the southeast to join in the formation of the Savannah River Environmental Sciences Field Station.

On November 22, 1996 the Savannah River Site hosted the inaugural conference of the Environmental Sciences Field Station at the Savannah River Site. In attendance were faculty from HBCUs and other colleges and universities in the states of North Carolina, South Carolina and Georgia. The faculty attendees were appointed by their respective Presidents. The Field Station is now a registered member of the Organization of Biological Field Stations (OBFS) and is the first Field Station in the country devoted entirely to underrepresented undergraduate research and education in science, mathematics and engineering.

The Savannah River Environmental Sciences Field Station won the NATIONAL HAMMER AWARD in 1999 and the GOVERNMENT SEAMLESS AWARD in 2000. In order to manage and coordinate the activities of the Field Station, a Steering Committee was formed. The Steering Committee inaugurated the Savannah River Environmental Sciences Field Station Advisory Board. The Advisory Board has two officers, one chairperson and a secretary. The Savannah River Environmental Sciences Field Station Advisory Board provides recommendations for the future direction, development, management, and coordination of undergraduate educational activities of the Field Station while the Steering Committee is charged with the execution of the recommendations of the Advisory Board.

The Savannah River Environmental Sciences Field Station started with a two-phase plan to achieve its goals. Phase one of the plan includes one-day field activities, designed for hands-on experience, in which undergraduate students visit the field station with their instructors to collect field specimens for laboratory studies and analyses later at their institutions. More than 1500 undergraduate students from the member institutions have visited the Field Station under this program. Phase two involves extended semester and summer courses that are offered at the Field Station by faculty in the different areas of environmental science, agriculture, engineering and natural resource management.

Field Station programs are not only designed to increase science literacy of students, they also aid in recruitment and retention of underrepresented students through career redirection. The first multi-week courses to implement the long-term goals of the Field Station were offered in the summer of 1998. In the summer of 2000 seven undergraduate courses were taught at the Station. Graduate courses leading to the certificate in Environmental Monitoring and Restoration will begin in the Spring of 2001.
The integration of technology in research and education are essential for meeting the demanding need to develop a workable mechanism to optimize the effectiveness of research and education in South Carolina and this nation. This is extremely critical in this age of unprecedented technological advances when information delivery, training, and continuous research to improve performance and skill enhancement hold the key to competition. In addition, individual differences and cultural diversity issues are essential variables in measuring competition and performance in the workplace. The rapidity of change in the area of research and development (R & D) has created conditions that have forced established and developing countries to address factors and variables that traditionally were not present, and did not affect their drive toward competition.

The U.S. depends on a reliable supply of energy at steady prices, produced with reasonable impacts. For example, a tremendous amount of energy is needed to power our cars, light-up our homes and power our businesses. Presently, we are failing on all counts due to rolling blackouts, unstable gas prices, and air contamination which may cause global warming, sickness and even death. Thus, South Carolina State University’s (SCSU) College of Science, Mathematics, and Engineering Technology has an established Center for Energy Studies with an integrated approach to research and technology that provides for enhanced economic opportunities in South Carolina and the nation.

The primary mission of the Center is to integrate research and technology that will promote and support programs relating to the study of energy and its impact on society and to develop a resource network that can effectively respond to the public and private sector needs for planning, evaluation, and assessment related to today’s most pressing energy-related issues.

The Center serves as the mechanism for mobilizing the community and relevant resources to address energy-related research and educational issues pertinent to the specific focus areas listed below.
Physics at SCSU

Physics majors at SCSU acquire the background to pursue graduate studies or a number of career options including medical physics, astrophysics, electrical engineering, computer systems engineering, materials science, and technical business management. Courses in nuclear engineering combined with a physics degree can lead to careers in fields such as environmental science, reactor engineering, and nuclear medicine.

Partnership in Observational and Computational Astronomy (POCA)

POCA, funded under a National Science Foundation Program: Partnerships in Astronomy and Astrophysics Research and Education (PAARE), represents a partnerships between South Carolina State University, the National Optical Astronomy Observatory and Clemson University. The mission of POCA is to develop an effective, long-term partnership that combines the strengths of the three institutions to increase the scientific and educational output of all the partners with special emphasis on enhancing diversity in the field of astronomy.

Minority Consortium for Earth and Space Sciences

The mission of MUCESS is to increase minority participation in the Earth and space sciences. This includes faculty and student research, K-16 education and public outreach.

Robotically Controlled Telescope

SCSU is a charter member of the RCT Consortium which has taken over management of the 1.3-meter telescope at Kitt Peak National Observatory, approximately 50 miles west of Tucson, Arizona. The telescope is currently being refurbished in order to make it robotic. When fully operational, the telescope will be capable of observing in any one of three modes, manually on-site, remotely in real time over the Internet, or robotically without human intervention.

For more Information:  [http://physics.scsu.edu/portal/programs.html](http://physics.scsu.edu/portal/programs.html)
THE SMALL BUSINESS DEVELOPMENT CENTER

The SC State Region of the SC Small Business Development Centers’ mission is to advance South Carolina’s economic development by helping entrepreneurs grow successful businesses. The South Carolina SBDC is partially funded under Cooperative Agreement No. 9-603001-Z-0043-29 by the U.S. Small Business Administration.” The Small Business Development Center (SBDC) operates in partnership with the U.S. Small Business Administration. The support given by the U.S. Small Business Administration through such funding does not constitute an expressed or implied endorsement of the cosponsor(s) or participants’ opinions, products or services. All SBDC programs are non-discriminatory and available to individuals with disabilities.

One-on-One Technical Assistance

The Orangeburg Area SBDC provides one-on-one technical counseling for startup and expansion of small businesses. Information about the local chambers of commerce and other business and professional organizations is also provided.

- Marketing
- Financial Management Assistance
- Business Plan Development
- Business Education and Training
- Video Conferencing
RESEARCH CAPABILITIES STATEMENT

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