



2006 Annual Report on Research

Research at Florida A&M University is directed toward the resolution of complex issues that will enhance humankind.

Excellence with Caring



*Dr. Castell Vaughn Bryant
Interim President*



*Dr. Keith H. Jackson
Vice President for Research*

The faculty at FAMU has demonstrated its commitment to research excellence by securing over 300 active sponsored projects totaling more than \$54 million in external funding during FY 2005-2006. Moreover, expenditures made by faculty in contracts and grants now exceed \$53 million. These expenditures have allowed for a solid investment in the hiring of additional faculty and student researchers, state-of-the-art research equipment, funding for travel to research conferences and symposia.

FAMU faculty have been distinguished as Fulbright Scholars, published extensively in refereed journals, received numerous patents and have been invited to serve as lecturers and consultants for many national and international conferences.

“Excellence with Caring” is FAMU’s motto. The University is devoted to total student development, faculty and staff development and the provision of programs and services of high quality educational research merit. A 119-year history continues to uncover the fact that FAMU is committed to inspirational teaching, exemplary research and meaningful public and community service through creative partnerships at the local, state, national and global levels. The University is also committed to the resolution of complex issues that will enhance humankind.



Faculty Highlights

Four Florida A&M University (FAMU) professors have been awarded appointments from the J. William Fulbright Scholarship Board for the 2006-2007 academic year. They join the ranks of some 273,500 alumni of the U.S. Fulbright Scholar Program.



Dr. Folakemi Odedina, Professor of Pharmacy and Director of the FAMU Center for Minority Prostate Cancer Training and Research, is a U.S. Fulbright Scholar to Nigeria. She will conduct prostate cancer research and educational activities to continue her studies on health disparities in this area.



Dr. Gale Workman, Professor of Journalism, has been approved for candidacy on the Fulbright Senior Specialist Roster. She is eligible, for up to five years, to be matched with incoming program requests from overseas academic institutions for Fulbright Senior Specialists. An appointment involves a two to six-week grant research and/or teaching experience in a foreign country.



Dr. Salah Aziz, Coordinator of Academic Programs in Engineering, is a U.S. Fulbright Scholar to Egypt and Jordan. He will assist two colleges of engineering in Egypt and two colleges of engineering in Jordan to develop program objectives and student outcomes which are comparable to the International Standards set by the Accreditation Board for Engineering and Technology (ABET).



Dr. Yvonne McIntosh, Associate Professor of French, has been awarded a Fulbright Teacher Exchange grant. She will teach English courses to French high school students.



Environmental Sciences Institute Professor **Dr. Larry Robinson** is one of 14 members of the Committee on Mine Placement of Coal Combustion Wastes. The committee, formed as an initiative of the U.S. Congress and Environmental Protection Agency, released the national report, "Managing Coal Combustion Wastes in Mines."



Dr. Oghenekome U. Onokpise, professor and coordinator of graduate programs in CESTA, was chair of the 2005-2006 Agricultural and Natural Resources Sciences section of the Florida Academy of Sciences. Onokpise was also awarded a three-year grant of nearly \$300,000 from the USDA Competitive Capacity Grants Program for studies on the Biological Control of Cogongrass, an invasive species of grass in the Gulf Coast states.

Dr. Cynthia Warrick, associate professor of environmental health, was selected by the U.S. Department of Health and Human Services to serve on the Board of Scientific Counselors for the National Center for Environmental Health.



Aaron White and a Mote Marine Lab scientist placing a satellite transmitter on a sea turtle. This picture was featured on the front page of the Venice Gondolier Sun newspaper.

Student Highlights

Aaron White, an environmental sciences doctoral student, attended the 2006 International Sea Turtle Society in Crete, Greece. The organization is dedicated to research and conservation of marine and freshwater turtles from across the globe. White presented master's thesis research on the "Heavy Metal Concentrations in Carretta Carretta."

White was also selected to be a Florida Gubernatorial Fellow for the 2005-2006 academic year. During his fellowship, he worked for the Department of Environmental Protection and the Florida Geological Survey.



PHEREC researchers apply insecticide to vegetation as a barrier against adult mosquitoes.

Research Highlights

SHOO FLY, DON'T BOTHER ME: Mosquitoes, ticks and other biting arthropods are important to public health. Research conducted on the biology and new methods of control of these insects has major impact in public areas and governmental agencies throughout the state of Florida. Under Dr. John P. Smith, the Public Health Entomology Research and Education Center (PHEREC) in Panama City, serves as a training ground for faculty, students and pest control professionals.

In the 2005/2006 fiscal year, PHEREC scientists secured 25 grants worth a collective \$1,280,839 in sponsored research funds. This is the highest single-year total in PHEREC's history! Included in this whopping amount is a \$558,851 grant from the USDA Center of Excellence Program won by Dr. James Cilek to study attractants for mosquito control and surveillance. Many of the projects under investigation received considerable in-kind donations from the sponsoring agencies as well.

In addition, PHEREC offers summer internships and graduate assistantships, primarily for FAMU students, to help the site's six on-site principal investigators. Current research includes repellants, the control of adult and larval mosquitoes using environmentally friendly pesticides, determining non-target risks of pesticides and arbovirus ecology, which includes West Nile Virus and other diseases insects can transmit.



The Center for Biological Control has secured \$2 million per year to identify pest species that endanger the U.S. agriculture and environment.

WHEN ALIENS ATTACK: Dr. Moses T. K. Kairo, professor and director of the FAMU Center for Biological Control, said recent years have seen 11 new insect species enter Florida each year. Through a joint agreement, the United States Department of Agriculture and the Animal Plant Health Inspection Service (APHIS) are providing \$2 million annually to the FAMU Center for Biological Control to support invasive alien species research. Part of the research is conducted offshore, particularly on species identified by APHIS as posing a serious threat to the United States. Emphasis is placed on developing tools to immediately identify potential pest organisms.

Through a separate cooperative agreement with the USDA, Agricultural Research Scientists affiliated with the FAMU Center for Biological Control began a five-year project, at \$1 million per year, to develop biological pest management programs for invasive species that threaten agriculture and environment. Center scientists are concerned about the growing demand for the production of safe, high quality food using methods that do not negatively impact the environment.



Heat tolerant raspberry plant

PLANT BREEDING AND GENETICS: The Georgia Fruit and Vegetable Growers Association sought the help of the FAMU Center for Viticulture and Small Fruit Research to create a raspberry crop that will grow in the warm climates of the southern United States. Raspberries, a cool season crop, cannot tolerate the high temperatures of the South. But with raspberry consumption growing at 15 percent annually, Southern small fruit farmers can be at a disadvantage for the economic opportunities afforded by the high demand for this fruit. Using advances in plant genomics and molecular engineering, FAMU scientists will identify specific genes in the fruit that possess heat tolerance and low chilling requirements in a single cultivar. FAMU hopes to use the Raspberry Genetic Improvement Program to train minorities in the plant breeding and genetics profession.



Lamango conducting Parkinson's disease research with student research assistant.

DRUG DEVELOPMENT: Nazarius Lamango, a professor of medicinal chemistry in the FAMU College of Pharmacy and Pharmaceutical Sciences, has synthesized compounds to modulate the biochemical pathway in the brain that is negatively affected by Parkinson's disease. In Lamango's experimental model, tremors and other effects of the disease were blocked. The FAMU Office of Technology Transfer, Licensing and Commercialization worked with Lamango to identify a license partner. The university is hopeful that Signum Biosciences will be able to develop commercializable therapeutic products based on Lamango's research.



CePAST researchers study the fourth state of matter to become a future long-term energy source.

PHYSICS AND ELECTRICITY: With a \$3.7 million investment in a new plasma science center, the Department of Physics has built its presence at Innovation Park, a 208-acre university-related research and development park in Tallahassee. The Center for Plasma Science and Technology (CePAST) is slated to become the premier facility in the state of Florida for the study of plasmas, the fourth state of matter. CePAST researchers will study how plasmas are made and evolve in high-energy density systems, and they will help create fusion plasmas to become long-term sources for the future.

The 32,000 sq. foot center includes a 6,000 sq. ft addition that contains a computer cluster facility, a laser plasma lab and space for Florida's first fusion facility. Faculty and graduate and undergraduate student researchers are dedicated to the science and new applications of theoretical, experimental and computational plasma physics. FAMU recently earned a new Ph.D. program in physics based in part upon its strength in research, and CePAST will look to train those postdoctoral researchers, with nearly \$6 million in high tech equipment and one of the most powerful lasers in the state. The facility is expected to generate at least \$4 million per year in plasma science and technology sponsored research.



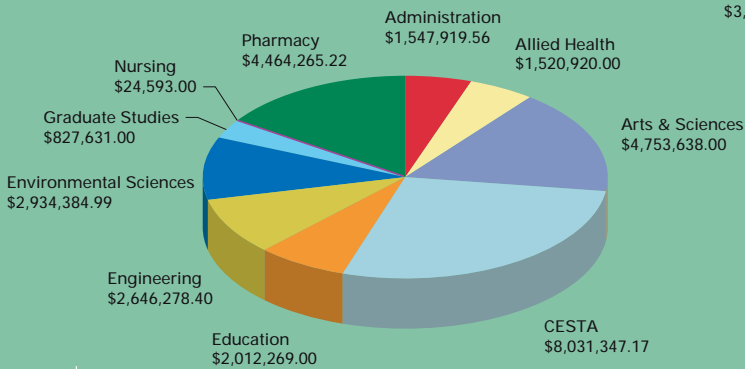
Weighing Sprague Dawley rat in FAMU's accredited animal care facility.

ANIMAL CARE IN RESEARCH: The fully-accredited Animal Care Facility at FAMU is responsible for all activities related to the proper care and humane use of animals in research. FAMU's animal care unit is among approximately 650 accredited programs worldwide. There are only three other HBCUs with this accreditation, all located in medical schools. The facility's functions include:

- Facilitating the animal-related research and teaching programs;
- Managing and administering a program of laboratory animal care that complies with the Federal Animal Welfare Act, the Guide, the Public Health Service Policy on Humane Care and Use of Laboratory Animals and the USDA regulations;
- Providing daily animal care, veterinary services and provisions for research services, surgical assistance and the care and use of animals; and
- Serving as the purchasing and receiving agent for all laboratory animals at the University.

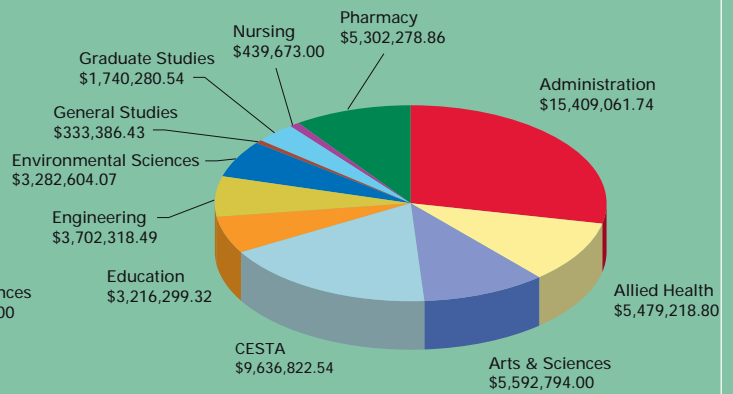
Research Funding

Awards Received for Research



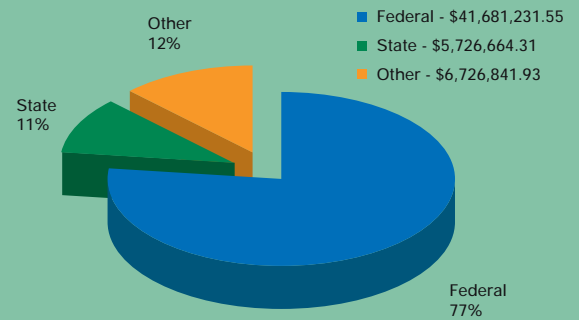
TOTAL = \$28,763,246.34

Awards by School/College/Area



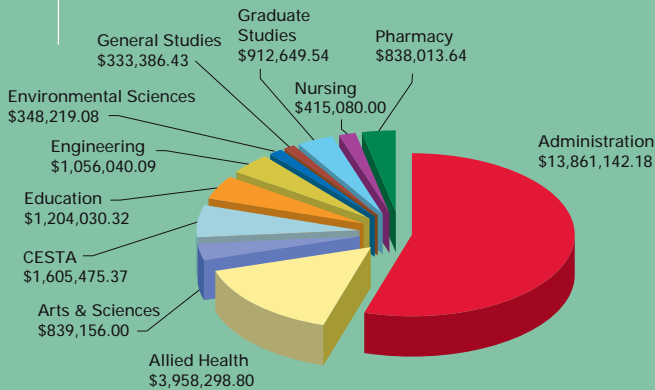
TOTAL = \$54,134,737.79

Awards by Sponsor Type



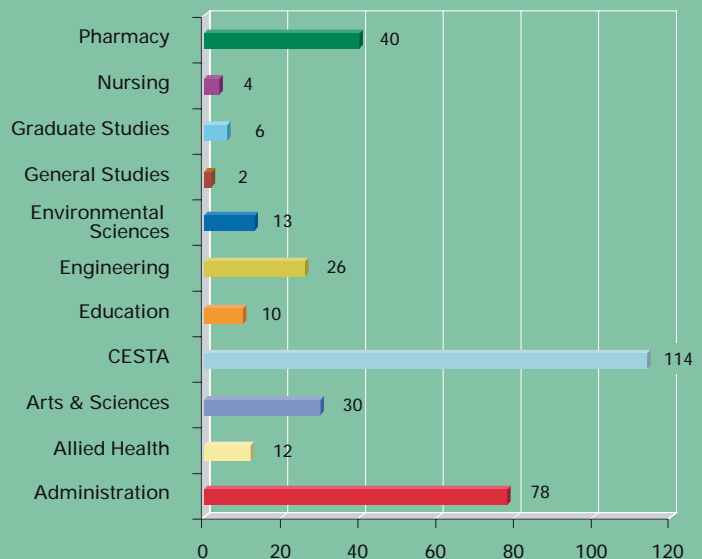
TOTAL = \$54,134,737.79

Awards Received for Training and Other Grants



TOTAL = \$25,371,491.45

Number of Awards Received



TOTAL = 335

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A photograph of a person in a white lab coat looking through a microscope. The person is in profile, facing left. The background is a soft, out-of-focus blue. The text is overlaid on the top left of the image.

FAMU offers
12 doctoral and
37 master's degree
programs.

Florida Agricultural and Mechanical University, a member of the State University System of Florida, is home to over 11,000 students, including graduate and professional students. FAMU offers 12 doctoral and 37 master's degree programs, as well as degree programs in law and pharmacy.

FAMU has been among the top Historically Black Colleges and Universities (HBCUs) to receive federal research dollars from the National Science Foundation (NSF) and National Institutes of Health (NIH). Other mainstream funding sources include the Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA), the U.S. Department of Agriculture (USDA), the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Defense (USDOD).

To meet the research and development demand in the State of Florida and nationwide, the University has an extensive array of specialized research centers and institutes that have allowed for interdisciplinary scientific investigations. Among them are the Center for Plasma Science and Technology, the Center for Minority Prostate Cancer Research and Training and the Environmental Cooperative Science Center. Through these centers, faculty and students study ecological and coastal management issues, experimental and computational plasma physics, prostate cancer incidences and disparities, and more.



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