ANNUAL REPORT ON RESEARCH
2007

SPECIAL EDITION

July 2006 – June 2007

FLORIDA A&M UNIVERSITY
Carl B. Goodman, Ph.D., associate professor in the FAMU College of Pharmacy and Pharmaceutical Sciences, prepares cDNA samples from rat brain tissues to measure the gene expression by real-time polymerase chain reaction (RT-PCR) of Mu opioid receptor after chronic treatment with morphine. This is the caliber of continual research conducted at FAMU.
Dear Readers:

It is an honor to greet you in this Florida A&M University (FAMU) Annual Research Report. This publication highlights the outstanding accomplishments of a research program on the move at FAMU. Since the time of its inception, the Division of Research has served as a tremendous source of enhancement to Florida A&M University on many levels.

Since the last annual report, the division and university have begun several initiatives aimed at achieving solid footing as a world-class institution that is second to none. Among the exciting initiatives is the university’s Center for Plasma Science and Technology (CePaST) which is slated to become the premier facility in the state of Florida for the study of plasmas. Researchers from FAMU 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.

With this and several other accomplishments by our Division of Research, FAMU is poised to continue its journey toward excellence and to regaining our position among the nation’s elite colleges and universities. With your continued support, FAMU will continue to excel and shine its light of excellence along its path of success.

Best wishes in your future endeavors.

Sincerely,

James H. Ammons
President
Dear FAMU Supporters:

The Florida A&M University (FAMU) Division of Research (DOR) is committed to and involved with enhancing the University’s three-pronged approach in addressing its research enterprise with enhanced capabilities. Since 2003, FAMU DOR has been composed of the Office of Sponsored Programs, the Office of Animal Welfare and Research Integrity and the Office of Technology Transfer, Licensing and Commercialization. To achieve the University’s mission and goals, the Division of Research works closely with the Office of the Chief Financial Officer and Vice President for Administrative and Financial Services. Established to provide administrative infrastructure conducive to supporting a research environment, each office’s focus is designed to meet the needs of the investigator at various stages in the research process.

This collaborative report reflects several desired outcomes of the FAMU DOR, with the emphasis being on continual process improvement. The pressing challenges of this 21st century undoubtedly demand professional, administrative research expertise to help fulfill the needs of our global society.

The FAMU faculty is addressing some of the most important research problems of this decade. For example, FAMU produced seven (7) African American Ph.D. physicists during the 2006-2007 academic year, more than 40% of the entire nation’s average annual output of approximately 15 total, according to data from the National Science Foundation (NSF). This year Science magazine, www.sciencemag.org, published by the American Association for the Advancement of Science (AAAS) examines who’s up and who’s down on the publication poll; FAMU is 2nd only to Charles R. Drew University School of Medicine & Science (Los Angeles, CA).

FAMU’s Division of Research continues to reach the goals of the strategic plan: “FAMU will become a nationally recognized research institution with an efficient infrastructure that supports the administration of research activities that foster relevant research, intellectual discovery, creative problem solving and the dissemination of knowledge.”

The growth in the number of proposals submitted by FAMU faculty, the awards given by school/college/area, along with the support by federal, state, and local awards serves to substantiate the new discoveries ranging from addressing biosecurity concerns to the USA, to global environmental research in Ecuador, to our physicists discovering nanoscale turbulence.

Hopefully, as you read this document, it will serve as an example to strategically empower our sustaining commitment to “Excellence with Caring,” with FAMU leading the way as a preeminent research institution.

Sincerely,

Keith H. Jackson, Ph.D.
Vice President for Research
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The Femtosecond Laser Oscillator is used to send extremely short pulses of light.
The Significant Seven:
FAMU is Major Contributor to Nation’s Physics Workforce

On average, approximately 15 doctor of philosophy (Ph.D.) degrees in physics are awarded to African Americans in the United States each year, according to data from the National Science Foundation (NSF) http://www.nsf.gov/statistics, Division of Science Resources Statistics. In a survey of earned doctorates in physics, U.S. citizens and permanent residents, Blacks and non-Hispanics, FAMU awarded seven (7) Ph.D. degrees in physics to African Americans between 2006 and 2007—a significant number of the total national output, according to Patrick Mulvey at the American Institute of Physics.

“There are so few African-American physicists produced,” said Roman Czujko, director of the Statistical Research Center at the American Institute of Physics (AIP) http://www.aip.org/statistics/trends/highlite/bachplus5/figure1.htm. “The numbers have bounced between 12 to 22 over the last five years. The recent graduates of FAMU’s doctoral physics program are a very big percentage.”

Roman Czujko has been the Director of the Statistical Research Center of the American Institute of Physics for the last 13 years. He is a Fellow of the American Physical Society.

Jeremy Jackson earned his Ph.D. degree in physics from FAMU in August 2006. He is now a Research Associate at the Oak Ridge National Laboratory, TN.

Stephen Roberson and Eddie Red earned Ph.D. degrees in physics from FAMU in December 2006. Roberson is a National Research Council Fellow at the U.S. Army Research Laboratory in Aberdeen, Maryland. Red accepted an E. O. Lawrence Postdoctoral Fellowship at the Lawrence-Berkeley National Laboratory, University of California.

Clean Barnett and Ely Leon earned Ph.D. degrees in physics from FAMU in May 2007. Barnett is a Postdoctoral Research Fellow in forensic science at Florida International University. Leon is an Adjunct Physics Instructor at FAMU.

Chavis Raynor and Bulmuo Maakuu took their doctorates during the fall of 2007. Raynor is a postdoctoral fellow with the FAMU Department of Physics CePaST (Center for Plasma Science and Technology). Maakuu is now a postdoctoral fellow with the FAMU Department of Physics involved with continual research in some applications of the intense soft x-rays generated by the microsecond capacitor bank.

Bulmuo Maakuu, Ph.D. uses this capacitor bank established for the generation of intense soft x-rays at the FAMU Department of Physics.

Chavis Raynor, Ph.D.’s dissertation. Using a capacitive bank, he created a disturbance at the opposite end of the tube (not shown) which accelerated to a Mach 23 shock wave.

This is the Arc-Driven Shock Tube I used for Chavis Raynor, Ph.D.’s dissertation. Using a capacitive bank, he created a disturbance at the opposite end of the tube (not shown) which accelerated to a Mach 23 shock wave.

FAMU’s Ph.D. program in physics is the only one of its kind in the southeast, according to Charles Weatherford, Ph.D., chair, FAMU Department of Physics. In addition to a standard physics curriculum, the university has two new research centers with academic programs in astrophysics, astrochemistry, and plasma science and technology.

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According to the American Institute of Physics (AIP) Statistical Research Center, there have been 37,660 total physics Ph.D.s awarded over 32 years in the United States of America from 1973-2004:

- 487 Hispanic American Ph.D. Physicists
- 291 African American Ph.D. Physicists
- 41 Native American Ph.D. Physicists

“SUCCESS—Success is a journey, not a destination.”
– Anonymous
Charlemagne Akpovo, Ph.D., is running a laser induced plasma experiment at the Laboratory for Modern Fluid Physics; this experiment was part of his Ph.D. dissertation.

“Physics is the fundamental science—the basis for all of the natural sciences,” said Weatherford. “Our country needs this workforce to study new ways to generate energy, to work in the national defense effort, and in general to staff the national scientific enterprise. We have to produce physicists who can do this important work.”

FAMU produced its first Ph.D. in Physics in the spring of 2004. Kyron Williams, who received the 2007 National Society of Black Physicists Distinguished Dissertation Award, is now an assistant professor in the FAMU Department of Physics. Williams has been focusing on his area of research: Turbulence in fusion and astrophysical plasmas. His recent publication activities include:


FAMU was recently awarded a $5 million grant from the National Science Foundation (NSF) to establish the Center for Astrophysical Science and Technology (CAST). A major objective of the grant is to increase the number of African-American Ph.D.s in astrophysics and astrochemistry. FAMU aims to produce 15 African-American Ph.D.s in these areas over the five-year grant period.

Environmental Sciences Institute (ESI) Remains Accountable and Responsible

The FAMU Environmental Sciences Institute (ESI) enjoyed another successful year in research activities and grantsmanship. Five grants were awarded to ESI faculty totaling over $3.3 million from agencies such as the National Oceanic and Atmospheric Administration (NOAA), The Doris Duke Foundation and the National Institutes of Health. The 10 faculty in the ESI produced 20 publications in journals and edited books.

Dr. Larry Robinson, ECSC Director, (on the right) receiving the funding for the 2006-2011 cooperative agreement from NOAA’s Vice Admiral Conrad Lautenbacher.

One of the highlights among the faculty was the appointment of Larry Robinson, Ph.D., to Senior Scientist position at the United States Department of Agriculture (USDA). He is the first person from an 1890s institution to serve in that capacity. He also served the campus as CEO last June. During the year, Robinson, who once attended LeMoyne-Owen College, holds the B.S. degree in chemistry (summa cum laude) from Memphis (TN) State University and earned his Ph.D. degree in nuclear chemistry from Washington University, St. Louis, MO. Robinson also received other prestigious appointments to organizations including the NSF’s National Ecological Observatory Network’s (NEON) Education Tiger Team, the International Advisory

“My physics education (at FAMU) was excellent. I had the wonderful experience of working with brilliant professors performing world-class research. Presently, my research interests are in fusion and astrophysical plasmas. Fusion research seeks to harness the power of stars to produce a clean and abundant source of electricity for future generations. In space, most of the matter present is in the form of plasmas, be they stars like our own sun, nebulae (clouds of remaining gas dispersed in space), or stellar nurseries where new stars are born. An essential element needed in understanding our universe is the study of plasmas in such environments. My specific area of research deals with the study of turbulence in such environments. I am interested in the origins of turbulence, in hopes that one day we may be able to help make fusion energy the power of the future, and to solve the fundamental mysteries of the universe.”

“To teach is to touch the future forever.”
– Anonymous

Kyron Williams, PhD.

Larry Robinson, Ph.D., ECSC Director with NOAA.
Board to Florida Center for Research in Science, Technology, Engineering and Mathematics (FCR-STEM), NOAA’s Office of Oceanic and Atmospheric Research Constituent Roundtable on Ocean and Coastal Ecosystem Management.

Jennifer Cherrier, Ph.D., was approved for a sabbatical which she will spend as a visiting scientist conducting research in the Institute of Environmental Sciences at Leiden University in the Netherlands.

Cherrier holds a B.S. degree in biology/environmental science from Florida International University, Miami; the M.S. and Ph.D. degrees in Biological Oceanography and Biological/Chemical Oceanography (respectively) from the Florida State University.

Marcia Allen Owens, Ph.D., was appointed to the Board of the North American Association of Environmental Educators and is the only HBCU representative on the Board. Further, Owens authored a chapter in the book Justice in a Global Economy, which was named as a 2007 recipient of the American Library Association’s Choice award for Outstanding Academic Title.

Owens’ academic background is extensive as she earned her B.S. degree in biology from Jackson State University (Mississippi); her Juris Doctorate (JD) from Emory University School of Law (Atlanta); a Diploma for Advanced Studies in Teaching (DAST-same as an Ed.S. degree) and her Ph.D. degree in educational studies (science/environmental education) from Emory University. While at Emory University, Owens attained a Master of Divinity (M.Div.) degree from the Candler School of Theology and was a postdoctoral Lilly Fellow in religious practices and practical theology at the same institution.

Richard Gragg, Ph.D., was awarded funds to support the study and implementation of a new five-year undergraduate to Master’s Degree program. He also was awarded a prestigious Doris Duke Conservation Fellowship Award making FAMU the only HBCU to receive the award. Gragg earned his B.S. degree in biochemistry, SUNY (State University of New York) Binghamton University; his M.S. degree in pharmacology from FAMU and his Ph.D. degree in pharmaceutical sciences/toxicology, FAMU.

Another highlight was the hiring of a new faculty member, Ashvini Chauhan, Ph.D., who brings an international flavor to FAMU as he attained his B.S. degree in biology, Panjab University, Chandigarh, India; M.S. degree in applied botany, Panjab University; and his Ph.D. degree in environmental biotechnology at the Institute of Microbial Technology, Chandigarh, India. Chauhan completed his post-doctoral studies at FAMU and the University of FL: http://molecule.ifas.ufl.edu/, 2001-2005. His appointment as an Editor, Current Microbiology, http://www.springer.com/life+sci/microbiology/journal/284?detailsPage=editorialBoard offers rapid publication of new research on all aspects of microbial cells including prokaryotes and eukaryotes and, where appropriate, viruses. The coverage spans general, medical, and applied microbiology and virology, drawing on physiology, biochemistry, genetics, biotechnology, morphology, taxonomy, diagnostic methods, and immunology as applied to microorganisms.

Chauhan also serves on the Editorial Board of The Journal of Industrial Microbiology & Biotechnology (JIM&B) which builds bridges between academia and industry while keeping readers informed of the most important news and progress. http://www.springer.com/chemistry/biotech/journal/10295?detailsPage=editorialBoard. From a truly international viewpoint, JIM&B covers all aspects of the industrial applications of biotechnology, fermentation, environmental microbiology, biodegradation, biodeterioration, genomics, bioinformatics, quality control and other areas of applied microbiology. JIM&B is a publication of the Society of Industrial Microbiology & Biotechnology.

Henry Neal Williams, Ph.D., Director of the ESI and Professor, holds the bachelor’s degree in biology from North Carolina Agricultural & Technical State University (Greensboro); along with the M.S. and Ph.D. degrees in microbiology from the University of Maryland at Baltimore.

“MOMENTUM: It is not of importance where we stand, but in what direction we are moving.” – Anonymous
Williams organized and chaired a symposium at the American Society for Microbiology (ASM) meeting in Toronto, where he was also a speaker. The ASM is the largest biologic society in the world. “As the organizer, I was pleased to attract several highly regarded, internationally known scientists to join in the symposium,” said Williams. “They hailed from the University of Southern California, University of Delaware, University of Zurich and the University of the British of Columbia,” he concluded.

Henry Neal Williams, Ph.D., and FAMU ESI graduate student Tamar Dickerson conducting research during a research cruise in the Chesapeake Bay (the largest estuary in the U.S.—an incredibly complex ecosystem that includes important habitats and food webs.)

Williams also was invited to publish a book chapter in Predatory Prokaryotes — Biology, Ecology and Evolution (2007). Predatory prokaryotes are unique bacteria which survive by attacking and killing certain other microorganisms for food and growth. The Bdellovibrio and like organisms (BALOs) are the most invasive and well studied. They may have potential as a treatment for certain bacterial infections in plants, animals and humans. Williams and Ashvini Chauhan, Ph.D., along with collaborators at the University of Florida, have a grant from the United States Department of Agriculture, to test the capability of BALOs to reduce certain human pathogens in oysters in an effort to improve the safety of the shellfish. Further research must be conducted to learn about their ecology and lifestyles in saltwater environments. Williams is the world’s foremost authority on the ecology of the BALOs in saltwater systems.

FAMU and NOAA Reap the Benefits from Educational Partnership Program (EPP)

The Fourth Education and Science Forum gathering in Tallahassee amidst the National Oceanic and Atmospheric Administration (NOAA) and Florida A&M University (FAMU) Environmental Cooperative Science Center highlighted significant milestones of NOAA’s Educational Partnership Program (EPP), a five-year effort to engage and recruit scientific scholars from minority-serving institutions.

One of those highlights was the campus return of FAMU’s first graduate of EPP and NOAA Research Scientist, forum host, LaToya Myles, Ph.D. The Forum, attracted about 400 undergraduate and graduate students and representatives from government, research, academic and the private sector who are engaged in activities that support NOAA’s mission. Participants shared the results of education, outreach and research in atmospheric, environmental, marine and remote sensing science.

In an exchange with Myles, she stated: “One of the most important decisions that one has to make is the selection of a career. Many people will proclaim that they are looking for a job, but I feel that this differs greatly from finding a true calling…a lifelong vocation…a career. Jobs allow us to provide for our needs, like food and housing, and sometimes even our wants, like vacations and designer wardrobes. However, in my opinion, true careers fulfill other needs within us. Careers allow us to use our knowledge and talents in ways that fulfill us personally and contribute to the betterment of society in some meaningful way.”

As an undergraduate at Alcorn State University, Myles pursued degrees in chemistry and biology. A unique cooperative education experience sparked
her interest in environmental chemistry and led her to the Environmental Sciences Institute at Florida A&M University. She further indicated: “When my advisor and mentor, Larry Robinson, Ph.D., informed me of the NOAA EPP Graduate Sciences Program (GPP), I decided to pursue the opportunity even though I didn’t know much about federal careers as a whole nor about NOAA research in particular.”

Her participation in the GSP gave her opportunities to research air quality along Tampa Bay and Chesapeake Bay and to present her findings at major national conferences. Her GSP assignment led to a career position as a physical scientist at NOAA Air Resources Laboratory Atmospheric Turbulence & Diffusion Division in Oak Ridge. As a career research scientist at NOAA, Myles is currently involved in a multi-year experiment studying atmospheric ammonia fluxes over fertilized agricultural land in North Carolina. Ultimately, the data collected during these experiments may help farmers optimize their fertilization rates and methods while minimizing ammonia volatilization to the atmosphere.

FAMU and Cold Spring Harbor Laboratory Held Cutting-Edge Biotech Workshop for High School and Community College Teachers

FAMU was selected as the site for an ultra-modern biotechnology learning center presented by Cold Spring Harbor Laboratory, New York (CSHL), a world leader in DNA research. Founded in 1890, CSHL is a private, non-profit institution with research programs in cancer, neuroscience, plant genetics, genomics, and bioinformatics and a broad educational mission according to www.cshl.edu.

In partnership with the National Science Foundation (NSF), the Dolan DNA Learning Center-CSHL held a five-day workshop for high school and community college teachers at the FAMU Department of Biology. Sessions were held on plant molecular biology and genomics, and participants learned how to implement Internet-based bioinformatics (the use of computers to extract and analyze data) in the classroom. An application for the program is available online at www.dnalc.org.

Gokhan Hacisalihoglu, Ph.D., assistant professor of biology at FAMU, coordinated and hosted the “2007 Cold Spring Harbor Laboratory Plant Genomics & Gene Annotation Workshop” that taught the latest methodologies, many of which are vital to the state’s agriculture industry.

Hacisalihoglu, who received his baccalaureate in horticulture and agricultural engineering from the University of Ankara, Turkey and both his M.S. degree in seed physiology and Ph.D. degree in plant biology/molecular physiology from Cornell University, Ithaca, NY stated: “We were very excited about hosting this workshop in Florida because our agriculture industry relies heavily on the research findings of plant molecular geneticists. The Cold Spring Laboratory has a legacy of strong commitment to education.”

Dolan DNA Learning Center staff members led the workshop and educated attendees on biotech skills necessary to accelerate education on modern plant genetics and bioinformatics in local schools. The workshop brought together teachers and educators from a broad range of schools from several states including California, Nebraska, Maryland, New Jersey, New Hampshire, Mississippi, and Florida. All workshop participants received a stipend and free educational materials funded by grants from the NSF. Hacisalihoglu underwent special leadership training at CSHL and at Cornell University as an NSF faculty fellow.

The mission of the Dolan DNA Learning Center is to educate students and families about the technology associated with modern biotechnology and genetic research. It is the world’s first science center devoted entirely to genetics education. The Center extends the Laboratory’s traditional research and postgraduate education mission to the college, pre-college and public levels.

Hacisalihoglu conducts research that bridges fields of plant physiology, molecular genetics, and environmental stress. The overall goal is to study problems at the interface of these areas to understand how plants tolerate abiotic stress. He is particularly interested in elucidating the mechanisms used by plants to regulate tolerance in response to nutrient deficiency, and diseases. He was also selected as a Minority Affairs Committee (MAC) Recognition Awardee by American Society of Plant Biologists, and he was invited to its Annual Congress in Chicago, IL.

“Communication: Build bridges, not walls.”
– Anonymous
Hacisalihoglu’s Recent Publications:

Above G. Hacisalihoglu is loading DNA samples into agarose gel to analyze the gene products from bz1/bz2 in corn. He seeks to improve plant life by focusing on in vitro and in silico experiments with species including corn, beans, tomatoes and Arabidopsis. Arabidopsis (Thale Cress) is a small plant related to cabbage. It is the first plant to have its entire full DNA sequenced which makes it a great model plant for studying plant biology. It is not edible, nor is it sold in markets.


FAMU Ranks Second for Increase in Scientific Publications

Florida A&M University is ranked second among 200 top U.S. universities in growth of global scientific publishing, according to a recent National Science Foundation (NSF) study. The study, which covers more than a decade, found that the overall number of publications by U.S. scientists has remained flat, while the publication rate for emerging Asian nations and the European Union has grown. This study was published in the August 3, 2007 issue of *Science* magazine.

FAMU was one of eight universities recognized for growth in U.S. scientific publications, showing a 116-percent increase since the late 1990s. The full list, in rank order, includes:

1. Drew University of Medicine and Science
2. Florida A&M University
3. Clark Atlanta University
4. University of Nevada, Las Vegas
5. University of Montana
6. Colorado School of Mines
7. New Jersey Institute of Tech
8. Georgia Institute of Technology

“FAMU is fulfilling its goal of becoming a research-intensive institution,” said Keith H. Jackson, professor of physics and vice president for research. “We are recruiting more research faculty and establishing more graduate programs. An increase in scholarly and scientific publications is a natural consequence of this activity.”

Across various disciplines, faculty at FAMU are engaged in cutting-edge research activities that are leading to advances in physical, chemical, biological and social sciences, the quality of health care, the food and agriculture industry, environmental health and safety, bioengineering and other areas.

“Our research does not end in the laboratories,” said Henry Lewis III, PharmD, dean and professor in the FAMU College of Pharmacy and Pharmaceutical Sciences. “It is much more meaningful when we are able to share our methods and findings with the scientific community.”

Ongoing laboratory research at FAMU allows students to gain insightful experiences.

“It’s not what you gather, but what you scatter that tells what kind of life you have lived!”
— Anonymous
Institutional Review Board and Institutional Animal Care and Use Committee Strive for Consummate Integrity in Research

FAMU’s “Excellence with Caring” is the quintessence of the business and principles of the FAMU Institutional Review Board (IRB) and the Institutional Animal Care and Use Committee (IACUC). The mission of the judicious IRB is to review all research involving human subjects prior to the initiation of research as required by University policy and Federal Regulations 45 CFR 46, Code for the Protection of Human Subjects in Research, and applicable ethical standards as published by professional groups and societies. Team members are:

Gwendolyn Singleton, Ph.D.
IRB Chair and Assistant Professor
FAMU College of Arts and Sciences

Tony Manson, Ph.D.
IRB Vice Chair and Associate Professor
FAMU College of Education

Sharron C. Foster, M.D.
University Physician
Medical Director, FAMU Student Health Services

C. Perry Brown, DPH
Professor
FAMU Institute of Public Health

Warren Hope, Ph.D.
Professor
FAMU College of Education

Tanya Y. Robinson, M.S.
Regulatory Compliance Liaison
FAMU Division of Audit and Compliance

Angela Thornton, PharmD
Associate Professor
FAMU College of Pharmacy and Pharmaceutical Sciences

Rev. John White, II
Pastor, New Mount Zion AME Church
Tallahassee, FL

Doris Ballard-Ferguson, Ph.D.
Professor
FAMU School of Nursing

Attorney Linda Barge-Miles
Assistant Vice President
FAMU Academic Affairs/Provost Office

YoAnda Bonnette, M.S.
Associate Director of Post/Pre Award
FAMU Division of Research
Office of Sponsored Programs

Further, the mission of the IACUC is to assess the animal care program and to assure that the proposed research is evaluated according to the Animal Welfare Act, the Guide for Care and Use of Laboratory Animals, as well as the PHS Policy. The animal care and use program supports the research initiatives at FAMU. Present committee members are:

Magdi R. I. Soliman, Ph.D.
Professor and Chairman
FAMU College of Pharmacy and Pharmaceutical Sciences

Tanise Jackson, D.V.M.
Dir., Animal Welfare & Research Integrity
FAMU Division of Research

According to Manson, “The IRB is extremely important because of the effects it has on humanity. We must safeguard the human rights that every person has—testing individuals as though they were our mothers, grandmothers and relatives.”

Gwendolyn Singleton, Ph.D., IRB Chair

Tony Manson, Ph.D., IRB Vice Chair

FAMU’S DIVISION OF RESEARCH: “Transforming Phenomena into Reality – Total Transcendence”
CESTA
Addresses Biosecurity Concerns to the United States of America

From an economic standpoint, the value of crops that require pollination by honey bees in the United States is estimated at nearly $24 billion annually, and the added value to USA crops from honey bee pollination at $19 billion.

Recent years have seen increased concerns about the declining population of honey bees including a congressional hearing. The ectoparasite, Varroa mite is the major pest of honey bees and research led by FAMU-CESTA’s Center for Biological Control faculty: Lambert Kanga, Ph.D., in collaboration with Walker Jones, Ph.D., (USDA, ARS), Carlos Garcia (USDA ARS) and John Cascino, Ph.D., (Sylan BioProducts), has demonstrated the use of the fungus Metarhizium to control Varroa mite populations in bee colonies. Current efforts are tailored on enhancing stability, persistence of fungal spores, and mass production of the fungal products.

According to ongoing research provided in part by Kairo, Ph.D., and the CBC, indications are that honey bees are economically important more for crop pollination, than for honey production. More than 400 agricultural crops worldwide are pollinated by honey bees. Pollen and bee venom are important in health food and alternative medicine.
FAMU

and NSF Extend Legacy of Replenishing the Academy

Roselyn Williams, Ph.D., associate professor of mathematics, served as Principal Investigator (PI) on several National Science Foundation (NSF) grants. She serves as PI for the FAMU Computer Science Engineering and Mathematics Scholarship (CSEMS) Program. The project was funded in the amount of $675,000 for seven years through 2007. Scholarships were provided for over 230 students; 45% of the graduates from this project entered into graduate programs.

Williams, whose academic background includes a B.S. degree in mathematics from Spelman College (Atlanta, GA); the M.S. degree in mathematics from the University of Florida (Gainesville); and the Ph.D. degree in mathematics from the Florida State University. Her research topic and area of interest: “Finite Dimensional Hopf Algebras.”

Further, Williams served as principal investigator for the FAMU Inter-Disciplinary Research Experiences for Undergraduates (FAMU-IREU), funded at the amount of $316,000 for nearly six years through April, 2007. The FAMU-IREU provided undergraduate students the opportunity to participate in faculty research in areas of economics, physics, computer science, chemistry and engineering. Students were selected from undergraduate programs nationwide to participate for two months during the summers.

Williams also served as co-principal investigator of the multi-institutional grant titled, the Alliance for the Production of African-American Ph.D.s in the Mathematical Sciences, funded at the rate of 2.5 million dollars for 60 months. The funding period is ongoing through June 30, 2010. The goals of the Alliance are to increase the number of African Americans that receive doctorates in the mathematical sciences, advance to tenured positions in undergraduate and graduate mathematics programs at U.S. Universities, advance to senior research positions in national scientific laboratories, and advance to positions of influence in technical industries that rely on scientific and mathematical research. FAMU sponsored the Annual Alliance Conference in April, 2007 where nine institutions were represented. During the 2006-2007 academic year, the Alliance provided scholarships to five mathematics majors in the amount of $5,000 each.

Williams also participates in two interdisciplinary research teams at FAMU. She investigates economic growth models and their application to solving problems of poverty and negative economic growth rates of under-developed countries. She also investigates the application of group theory to problems in physics and chemistry.

“QUALITY—Individually and together we must yield only the finest. Our signature is the assurance of quality.”
– Anonymous
FAMU graduate Misha Granado left college last spring with a master’s degree in public health and a prestigious research opportunity as a 2007-2008 Fulbright Fellow. Granado will spend nine months in Barbados, West Indies investigating her project entitled: “Using Focus Groups to Identify Breast Cancer Screening Barriers among Barbadian women: An Exploratory Approach.” The justification for conducting this research project is that Barbadian women, similar to African-American women, experience a low incidence yet high mortality from breast cancer. Unfortunately, there is little empirical data on the breast cancer screening behavior and barriers as it pertains to Caribbean women, and no such information for Barbadian women.

Granado said her research is hoping to dispel the myth that all individuals of African descent can be grouped into one race when examining the issues of late-stage breast cancer detection. Her research studies have shown breast cancer is diagnosed at later stages in African Americans and women of African descent. Thus, Granado, who also holds a master’s degree in community psychology from FAMU, said strategies to increase early detection must be developed. “I will identify the similarities or differences among perceived barriers to breast cancer detection, thus possibly indicating that culture rather than race is a better determinant of behavior,” she said.

Granado was one of 15 graduates of the spring 2007 class in the FAMU Institute of Public Health (IPH), where she served as vice president of the student organization, the Future Public Health Professionals (FPHP). “We are very excited about Misha’s accomplishment and the wonderful experience she will gain in utilizing her research tools,” said Cynthia M. Harris, Ph.D., IPH director and professor. “It certainly bodes well for the Institute and for FAMU, in general, regarding the outstanding caliber of students and the high quality of public health training received.”

A personal commitment to researching breast cancer—which is a part of her family history—and a common cultural thread to the Caribbean island of Barbados (Granado is a native of Trinidad), motivates her to pursue a career in international women’s health.

Her data collection takes place at The Chronic Disease Research Centre, Tropical Medical Research Institute of the University of West Indies with noted Barbadian breast and prostate cancer researcher, Anselm Hennis, Ph.D., along with Ian Hambleton, Ph.D., Angela Rose and other researchers within the field who are all anticipating the results.

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Here, Granado and Juanita Lynch, one of her Fulbright contacts in Barbados attend a college fair given by the U.S. Embassy. There she gave a presentation entitled: “A New World: University Life in the U.S.”

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Two Added to Pharmaceutical Sciences’ Ph.D. Alumni

During the Fall semester of 2006 and Spring semester of 2007, FAMU’s College of Pharmacy and Pharmaceutical Sciences (COPPS) heralded two doctorates in the pharmaceutical sciences.

Margaret Lyles-Eggleston, Ph.D., focused on the medicinal chemistry track with her dissertation entitled: “Metabolism-Based Rational Drug Design, Synthesis and Evaluation of Haloperidol Analogues.” The FAMU College of Arts & Sciences’ Department of Chemistry is now home for Lyles-Eggleston, where she is an assistant professor. There, she teaches courses and labs in general chemistry.

Ayoola Aboyade-Cole, Ph.D., narrowed her research topic to: “The Inhibition of PHLP Induced Gene Expression and Cell Cycle Perturbations by Diallyl Sulfide (DAS); a Possible Mechanism of Breast Cancer Prevention.” Aboyade-Cole is now a postdoctoral trainee in environmental pathology; pathology and laboratory medicine in the Lineberger Comprehensive Cancer Center at the University of North Carolina, Chapel Hill. She and her lab group are investigating the potential use of mTOR inhibitors as a treatment for serous (type II) endometrial cancer.

Teachers for a New Era (TNE) Encouraged through Team Research

Development of high quality teachers at Florida A&M University is a university-wide endeavor. The Teachers for a New Era (TNE) initiative is housed in the Division of Academic Affairs and supported by a grant from the Carnegie Corporation of New York. The university-wide approach to research that impacts teaching and learning is a critical initiative at Florida A&M University.

A research community under the auspices of the Teaching Learning Institute is engaged in critical research to answer questions and implement solutions regarding the impact of effective teachers on P-12 instruction as well as the learning growth of university prospective teacher education candidates. An institutionalized Teaching Learning Institute supports collaboration among faculty from the College of Arts and Sciences, College of Education, and the School of General Studies, school-based professionals, faculty from other areas of the university, and pre-service teachers through professional development, training, and research opportunities. A $3 million dollar grant from the Carnegie foundation with potential of $2 million dollars additional funding has been matched and supported by Florida A&M University in strategic activities to create a culture of evidence seekers dedicated to the radical redesign of teacher education.

Gwendolyn Trotter, Ph.D., Director of Teachers for a New Era (TNE), has a B.S. degree in elementary education, the M.S. degree in education with an instruction materials specialty and the Ph.D. degree in curriculum instruction with a reading specialization, all from Southern Illinois University, Carbondale. Trotter completed a postdoctoral fellowship with the Rochester (New York) Institute of Technology and the National Technical Institute for the Deaf and Hearing Impaired, as well as computer certification at Clark College in Dubuque, Iowa.

Serena K. Roberts, Ph.D., is Curriculum and Evidence Coordinator with a B.S. degree in English from North Dakota Minot State University, the M.A. degree in English from Bemidji State University (Minnesota) and the Ph.D. degree in curriculum and instruction from the University of Kansas, Lawrence.

They team with Norish L. Adams, M.A., Coordinator, Induction Program/K-12 Partnerships, earned her B.S. degree in mathematics from Tennessee State University (TSU) in Nashville along with secondary education certification for grades 7 – 12. She has the M.A. degree in mathematics from the University of Oklahoma, Norman and has doctoral studies in curriculum and instruction from TSU. She continues to provide strategic direction for building the TNE research community and serves as Director of FAMU’s National Board Resource Center.

For additional information, please visit: http://www.carlorganisation/sub/program/teachers.html.

“TEAMWORK—Many hands, many minds, one goal.” – Anonymous
FAMU’s Faculty Research Scholars (FRS) have joined the TNE effort, by invitation or by volunteering, from across campus. They have undertaken research to access the effects of curricular changes developed by TNE design teams. Others are identifying the data to be collected as evidence of the efficacy of upcoming numeracy and literacy interventions. Underway is a systematic approach to a literature foundation for TNE activities utilizing meta-analysis methodology (a review of existing literature using comparisons across studies). A modified meta-analysis methodology is also being conducted on University internal data and assessment reports about student and candidate numeracy and literacy performance.

Because of the wealth of data available to Faculty and Visiting Research Scholars (VRS), they continue to generate protocols and Research and Evidence Plans to study pupil, student, and novice teacher learning in well-defined areas of numeracy, reading comprehension, and writing fluency.

TNE researchers have begun to generate Research Briefs that analyze research efforts related to changing curriculum in teacher education. FRS and VRS are compiling files with trend and longitudinal data for in-depth and impact-related research on program, student, and novice teacher continuous improvement.

Currently working with the graduate program in the Department of Elementary and Secondary Education, Manson also serves on committees dedicated to the IRB (Institutional Review Board), NCATE and SACS efforts. Previously, he was the Coordinator for Professional Development Schools, and the Collaborator for the “Call Me Mister” Program at Claflin University in Orangeburg, South Carolina. Additionally, his experiences include teaching stints at Austin Peay State University, Middle Tennessee State University, and Texas Southern University. Further, Manson has several journal articles, monographs and books to his credit. His background includes an extensive urban and suburban public school experience as a classroom instructor on all-school levels. Moreover, he has served in several public school districts working with a diverse student body throughout the United States (California, Florida, Kansas, Michigan, South Carolina, and Texas).

Gloria T. Poole, Ph.D., is a professor and newly appointed Associate Dean for Program Approval in the FAMU COE. Poole served as the institutional TNE-ELD (Teachers for a New Era-English Language Development) representative while serving as Director of ESOL (English for Speakers of Other Language) for the PEU (Professional Education Unit). She has attended and participated in the TNE-ELD Conference, Boston College. (Photo unavailable.)

Patricia A. Green-Powell, Ph.D., associate professor, Department of Educational Leadership and Human Services, attained her B.S. degree from FAMU with a major in speech pathology and audiology and a minor in special education. Powell received her master’s and Ph.D. degrees from Florida State University in Educational Administration/Leadership.

Green-Powell has served as a Board of
Examiners Member of the National Council for Accreditation of Teacher Education, and has worked as Program Director, Program Approval, Florida Department of Education.

Gikiri Thuo, Ph.D., associate professor, College of Arts and Sciences, Department of Mathematics, FAMU. Thuo received his B.S. degree in mathematics from Morehouse College. He received his M.S. degree in pure mathematics from Clark University, and the M.A. degree in applied mathematics & scientific computation from the University of Maryland. Thuo earned a Ph.D. degree in applied mathematics & scientific computation from the University of Maryland.

Nancy McConnell, Ph.D., associate professor, Educational Leadership and Human Services, joined the FAMU faculty in 1983, first in the Computer and Information System program. In 1989 she joined the faculty in the College of Education teaching at all levels: undergraduate, masters and doctoral. Prior to FAMU, McConnell taught at Florida State University and Ferrum College in Virginia. She has been involved in technology and education since she key punched FORTRAN in the mid 1960s.

Ghazwan A. Lutfi, Ph.D., associate professor, Department of Educational Leadership and Human Services at FAMU has expertise in educational research methods, statistics, assessment and program evaluation. His research interest is in survey methods, accountability, and program evaluation. Lutfi has served as an evaluator and statistical consultant to various programs and grants and has presented and published numerous articles.

Elizabeth K. Davenport, Ph.D., J.D., associate professor, Department of Educational Leadership and Human Services, is the former coordinator of the Ph.D. in Educational Leadership and Human Services Programs. Davenport was a professor at Texas A&M University Kingsville (TAMUK) for four years prior to coming to FAMU.

Davenport holds both bachelor and law degrees from the University of Michigan and a Ph.D. degree in curriculum, teaching and educational policy from Michigan State University (MSU). She also has masters’ degrees in telecommunications and in adult and continuing education from MSU. At FAMU, Davenport, the author of over 30 article and book chapters, teaches legal aspects of education, administrative theory and technology courses. She also teaches business law and elementary social students in the undergraduate program.

Juanita Gaston, Ph.D., J.D., FAMU College of Arts and Science, Department of History, Political Science/Public Administration, received her B.S. degree in business administration from Alabama State University (Montgomery), her master’s degree in urban-medical geography, as well as her Ph.D. degree in urban-social geography, both from Michigan State University (East Lansing).

She has studied abroad since 1992 and has visited such countries as Tanzania, Senegal, and Turkey. Since 2000, Gaston has served as the Director of Census Information Center (CIC) and associate professor of geography at FAMU. Her past teaching and administrative experiences at FAMU include: associate professor of geography, Department of History, Political Science/Public Administration; visiting professor of natural resources, School of Business and Industry; visiting professor of geography, University of Wisconsin, Eau Claire; Coordinator of Social Sciences and associate professor of Geography, Tennessee State University.

“Whether or not you reach your goals in life depends entirely on how well you prepare for them and how badly you want them. You’re eagles! Stretch your wings and fly to the sky.”

– Dr. Ronald Erwin McNair

(October 21, 1950 - January 28, 1986)

Dr. McNair was an American physicist and a NASA astronaut, who perished during the launch of the Space Shuttle Challenger on mission STS-51-L. He was a native of Lake City, South Carolina. Preceding his untimely demise, he was talking of returning to his home state to teach at the University of South Carolina.

http://www.answers.com/topic/ronald-mcnair
**The Visiting Research Scholars**

**Afi Y. Wiggins** is a doctoral student in research statistics and evaluation and educational policy at the University of Virginia in Charlottesville, Virginia. She has a B.S. degree in early childhood and elementary education, a Master of Education degree in educational administration, and an Educational Specialist degree in educational leadership and research and evaluation methodology.

Her previous work experience includes teaching first and third grades, serving as interim assistant principal at an inner city high school in Birmingham, Alabama, serving as assistant program evaluator on several national grants, and serving as Director of Assessment at Alabama State University. Her research interests include the application of appropriate research methods in education, the influence of research on educational policy, and the development of educators as researchers. (Photo unavailable.)

**Mila Ignatz, Ph.D.**, earned a B.S. degree in chemistry from the University of the Philippines. She studied as a National Science Development Board (NSDB) Scholar to attain her M.A. degree in chemistry teaching. She then worked for two years as a Lecturer at the University of the Philippines, College of Education, and served as a member of a curriculum development team that produced a national curriculum program for teaching high school chemistry under the sponsorship of the Ford Foundation.

She came to the United States as a Fulbright-Hayes Travel Grantee and earned her Ph.D. Degree in Science Education at Florida State University. **Ignatz’s** early career experiences included teaching high school chemistry at Godby High School, working as a statistician for the state of Florida, and serving as research coordinator at the FAMU Developmental Research School (DRS) for 15 years. At the FAMU DRS, she was awarded several state and national grants, spearheaded a number of action research and enrichment programs for K-12 students and published extensively in the *National Association of Laboratory Schools Journal*. In 1989, she was reassigned to the College of Education to teach science and mathematics education methods courses and computer technology courses. In 1990, Ignatz was awarded the rank of full professor. She served as Co-Director of the Panhandle Center of Excellence in Mathematics, Science & Technology until 1992 during which time she received several grants to provide in-service workshops to teachers. From 1993-2001, she became the site coordinator of the FAMU Accelerated Schools Project (ASP) that was affiliated with the Stanford-based National Accelerated Schools Project founded by Hank Levin. The FAMU ASP was funded by the Knight Foundation. In 1995, the local ASP became an ASP Technical Assistance Site of which Ignatz was the Director. From 2001 until 2007 when she retired, Ignatz devoted those years to preparing pre-service to teach science in elementary, middle and high schools, providing in-service workshops in local schools, teaching earth and space science to education majors, serving as NCATE Standard 2 (Program Assessment and Unit Planning & Analysis) chairperson, and participating in the Teachers for New Era (TNE) Chemistry, Biology and Evidence Teams. Currently, she is working as a Visiting Research Scholar for TNE, volunteering at the Big Bend Hospice Center, and devoting the rest of her time taking care of her family and grandchildren.

**Mark Howse, Ph.D.**, was formerly an assistant professor in the Department of Secondary Education and Foundations in the FAMU College of Education, where he also served as Interim Director for TNE. At FAMU, he taught a cadre of courses: Teaching Elementary School Mathematics, Introduction to Educational Technology, Teaching Diverse Populations, College Algebra, Liberal Arts Math I and II, and Pre-Calculus and Trigonometry. Howse was also involved with several initiatives striving to enhance the quality of K-12 instruction.

Currently he serves as Associate Vice President of Assessment at Bethune-Cookman University, Daytona Beach, FL, where he coordinates all assessment activities for the institution. Born and raised in Nashville, Tennessee, Howse resided in Tallahassee, Florida where he came to earn a Ph.D. degree in curriculum and instruction with an emphasis on education and mathematics from the Florida State University. He also holds the baccalaureate...
and master’s degree in mathematics and education from Middle Tennessee State University (Murfreesboro).

He had been a faculty member at FAMU for five (5) years, where he was voted Most Dedicated Professor by the FAMU Chapter of Florida’s Future Educators of America (2002). Howse looks forward to a long career in education and will continue to explore issues related to the teaching and learning of mathematics for years to come.

Students
Showcased Patentable Ideas at Summer Invention Camp

Last summer, 37 middle and high school students in the Summer Invention Camp (now named Brite Idea Camp) at FAMU showcased their products and ideas that could someday make it to the marketplace. As part of a National Science Foundation (NSF) grant, the camp brings together the art and science of inventing and the business of transferring technology to commercial markets to the attention of young minds.

The participants, who were from Florida, Georgia and as far away as Texas, California, Connecticut and Delaware had their inventions displayed in the FAMU Coleman Memorial Library.

The Summer Invention Camp was hosted by the FAMU Office of Technology Transfer, Licensing and Commercialization. For three years, “seasoned” inventors, patent attorneys, former patent examiners and business people have taught students the meaning of innovation, inventing and creative thinking; how to determine if their ideas have already been disclosed by others; and how to protect and market them. Rose Glee, Ph.D., director of the FAMU Office of Technology Transfer, Licensing and Commercialization, said the students are taught the complete process of taking an idea from its conception to the market.

“We have seen great inventions from each year’s activity because the students really push to generate cutting-edge technologies,” she said. “In a week’s time, we immerse them in as much of the inventing process as we can, and we expect them to continue to innovate, especially in the areas of science, math and engineering.”

In addition to the NSF grant, the FAMU Summer Invention Camp was supported by the Southside and Northside Rotary International Clubs, the Taltech Alliance and other local sponsors.

FLORIDA A&M UNIVERSITY (FAMU)

—One of the nation’s largest, single-campus Historically Black Colleges and Universities (HBCUs). Located in Tallahassee, Florida, it was established in 1887 as a land-grant institution. Today, FAMU has an enrollment of approximately 11,000 students who are matriculating in one of the 12 schools and colleges or two professional programs (law and pharmacy). FAMU is the top producer of African-American educators, pharmacists and Ph.D. physicists in the nation. For more information, please visit www.famu.edu.

For more information, call the FAMU Office of Technology Transfer, Licensing and Commercialization at 850.412.7232.
## Fiscal Year Highlights

### Pending Patent Applications and Disclosures

From inception to fruition, with each new development, the FAMU Office of Technology Transfer, Licensing and Commercialization is instrumental in bringing ideas to the marketplace.

**FAMU’s Patent Process:**

**Know What To Expect: Here’s How It Works**

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Application Description</th>
<th>Date Filed</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Seth Ablordeppey, Ph.D.</td>
<td>Antifungal and Antiparasitic Indoloquinoline Derivatives (PCT)</td>
<td>3/21/2007</td>
</tr>
<tr>
<td>2</td>
<td>Yuch-Ping Hsieh, Ph.D.</td>
<td>A Novel Multi-Elemental Scanning Thermal Analysis (MESTA)</td>
<td>02/05/2007</td>
</tr>
<tr>
<td>3</td>
<td>Pascal Tixador, Ph.D.</td>
<td>A Permanent Magnet and Superconducting Field Winding Machine</td>
<td>02/05/2007</td>
</tr>
<tr>
<td>4</td>
<td>Hyun-Woo Park, Ph.D.</td>
<td>A Novel Mosquitocidal Bacterium and its Toxin</td>
<td>02/05/2007</td>
</tr>
<tr>
<td>5</td>
<td>Ben Wang, Ph.D.</td>
<td>Process of Forming High Temperature Polymer Composite Structures</td>
<td>01/08/2007</td>
</tr>
<tr>
<td>7</td>
<td>Reginald Parker, Ph.D.</td>
<td>*(1)Biologically Modified Buckypaper &amp; (4)High Filler loaded Lignin-CNT-Resin Nanocomposite</td>
<td>09/05/2006</td>
</tr>
<tr>
<td>8</td>
<td>Reginald Parker, Ph.D.</td>
<td>*(2)Biologically Photoconductive Organic Dispersion</td>
<td>09/05/2006</td>
</tr>
<tr>
<td>9</td>
<td>Reginald Parker, Ph.D.</td>
<td>*(3)Biologically Optimized Photovoltaic Cells &amp; (5)Open Air Manufacturing Process Methods</td>
<td>09/05/2006</td>
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<tr>
<td>10</td>
<td>Kinfe Redda, Ph.D.</td>
<td>(Application I) Synthesis of Novel Flavonoids and Effective Anti-HIV</td>
<td>09/05/2006</td>
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<tr>
<td>11</td>
<td>Kinfe Redda, Ph.D.</td>
<td>(Application II) Synthesis of Novel Flavonoids and Anticancer Agent</td>
<td>09/05/2006</td>
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<tr>
<td>12</td>
<td>Moeub Lanh</td>
<td>Finger Flags</td>
<td>09/05/2006</td>
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</table>

* The numeration indicates the breakdown of what is novel to the application process.

"**EXCELLENCE is the result of caring more than others think is wise, risking more than others think is safe, dreaming more than others think is practical and expecting more than others think is possible.**" – Anonymous

From inception to fruition, with each new development, the FAMU Office of Technology Transfer, Licensing and Commercialization is instrumental in bringing ideas to the marketplace.

**FAMU’s Patent Process:**

**Know What To Expect: Here’s How It Works**

1. **Submit Invention Disclosure**
   - APPROVED
   - DENIED

2. **TTLC Staff Conducts Patentability and Marketable Study of Technology**
   - APPROVED
   - DENIED

3. **Protection**
   - Patents
   - Copyrights
   - Trademarks
   - Service Marks
   - Trade Secrets
   - APPROVED
   - DENIED

4. **Commercialization**
   - Licensing
   - Marketing
   - Start up Business

5. **Distribute Net Income**
Disclosures reported allow a researcher who has developed something novel or new to protect it prior to it becoming public domain:

<table>
<thead>
<tr>
<th>Name</th>
<th>Disclosure Description</th>
<th>Date Filed</th>
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<tbody>
<tr>
<td>1. Sean Wallace</td>
<td>Variable Component Temperature Maintained Designed Unit (Hybrid System)</td>
<td>04/13/2007</td>
</tr>
<tr>
<td>2. Sean Wallace</td>
<td>VCTMDU-Variable Component Temperature Maintained Designed Unit (Gasification and Pyrolytic Reactor)</td>
<td>04/13/2007</td>
</tr>
<tr>
<td>4. Raymond Hix, Ph.D.</td>
<td>Use of bacteriostatic Rhamnolipids for the biological control of xylem-limited bacteria</td>
<td>03/30/2007</td>
</tr>
<tr>
<td>6. James Cilek, Ph.D.</td>
<td>Confined Release Chamber for Dispensing Aromatic Substances</td>
<td>02/08/2007</td>
</tr>
<tr>
<td>8. Nazarius Lamangho, Ph.D.</td>
<td>Inhibitors of prenylated methylated protein methyl esterase</td>
<td>12/01/2006</td>
</tr>
<tr>
<td>9. Michael McCaskill</td>
<td>Computer Tree</td>
<td>01/18/2007</td>
</tr>
<tr>
<td>10. Samuel Lee</td>
<td>The Smart DVD</td>
<td>12/06/2006</td>
</tr>
</tbody>
</table>

FAMU’s Office of Technology Transfer, Licensing and Commercialization (TTLC)

—A resource that assists university employees and students with finding answers to questions about university technologies and intellectual property. Rose Glee, Ph.D., and her professional staff of TTLC provide an array of specialized services for each academic unit and research center.

For further insight, please visit [http://research.famu.edu](http://research.famu.edu) or call the FAMU Office of Technology Transfer, Licensing and Commercialization at 850.412.7232.

“Research is creating new knowledge.”
– Neil Armstrong
International Agriculture Programs Engage in Research Programs to Develop Agriculture in Africa

The Center for International Agricultural Trade, Development Research and Training (CIATDRT) in the FAMU College of Engineering Sciences, Technology and Agriculture (CESTA) is actively engaged in research programs through international as well as local partnerships and linkages.

“We are committed to build strong networks that support knowledge acquisition to improve the quality of life for under-represented and economically disadvantaged people around the globe,” states CIATDRT Director Harriet A. Paul. Please read on:

Local Universities Partner to Conduct Health Study

In February and March of 2007, the Office of International Agriculture Programs at FAMU sponsored a research study in conjunction with the Florida State University (FSU) College of Medicine, Department of Medical Humanities and Social Sciences. The study investigated the knowledge, acceptability, and beliefs about Human papillomavirus (HPV) among college students at FAMU and FSU.

HPV is a sexually transmitted infection (STI) that affects approximately 20 million Americans. This research project was conducted by Zita Magloire, first year medical student at FSU’s College of Medicine under the guidance of Mary Gerend, Ph.D. (FSU’s Department of Medical Humanities and Social Sciences). The purpose of this study was to assess knowledge and awareness about HPV among a racially diverse sample of young men and women.

The study also sought to determine correlates of HPV knowledge, awareness, interest in the HPV vaccine, and perceived vulnerability to contracting HPV. Additionally, this study was used to identify specific knowledge deficits where participants would benefit from HPV education.

Like most STIs, HPV is most prevalent among adolescents and college age students. Because of its high prevalence, knowledge about prevention is one of the most important factors in reducing risk of contraction of genital warts and development of cervical cancer. An extensive amount of research has shown that this population has very little knowledge about HPV. Recently, attempts have been made to increase awareness of HPV and its related outcomes (genital warts, cervical cancer). In June of 2006, an HPV vaccine (Gardasil) was approved for use on girls and women ages 9-26. The vaccine has been shown to be effective at preventing infection with the viral strands that account for the highest number of genital warts and cervical cancer cases.

The findings of this study are presented in the article “Awareness, Knowledge, and Beliefs, about Human Papillomavirus in a Racially Diverse Sample of Young Adults” (Mary A. Gerend, Ph.D., Zita Magloire, B.S.) and will be published in the March 2008 edition of the Journal of Adolescent Health.

To read the article online, please visit http://journals.elsevierhealth.com/periodicals/jah/inpress and scroll down to article 19.

FAMU Supports Collaborative Research Program in Asia

Drought stress is known to predispose peanuts to aflatoxin (a micro-toxic fungal...
poison hazardous to human health, e.g., may be linked to liver cancer) contamination. Developing drought tolerant (DT) peanut genotypes has been identified as an alternative to reduce aflatoxin contamination. Hence, the long term goal of this research is to develop drought and aflatoxin-tolerant peanut genotypes to reduce aflatoxin contamination and improve food safety. Lack of markers to identify drought-tolerant genotypes and diverse genetic resources have slowed the success in producing drought and aflatoxin tolerant genotypes.

The project, funded by the U.S. AID (Agency for International Development), examines differences in biochemical and molecular responses of peanuts to drought stress in open fields. It is being conducted by Mehboob Sheikh, Ph.D., a professor at FAMU’s Center for Viticulture and Small Fruit Research. Sheikh holds both the B.Sc. (agriculture) and M.Sc. (agricultural botany) degrees from Agricultural University, India and his Ph.D. degree in plant physiology from the University of Oklahoma, Norman. His research interests include: protein synthesis, identification and characterization of peanuts and analysis of amino acids.

Please visit http://168.29.148.65/home.cfm for more enlightenment.

Mehboob Sheikh, Ph.D.

“The focus of biotechnology research is to discover genes and gene products responsible for crop productivity, nutritional value and quality for the development of value-added grape and peanut products. Grape research emphasizes the identification and characterization of genes and metabolites of value and cloning genes of interest for developing drought and disease tolerant grape cultivars with superior nutraceutical and enological characteristics. Peanut research includes development of drought and aflatoxin tolerant peanut genotypes with high methionine content to improve peanut food value and safety for enhancing farmer’s profit and consumer health. The biotechnology program employs latest genomic and proteomics tools and genetic resources from around the world to achieve the above objectives.”

“Education is the key to unlock the golden door of freedom.”
– George Washington Carver
Jonathan Arias, a senior agricultural science major at FAMU, is a part of a growing number of scientists who are conducting novel research in DNA profiling. As part of FAMU’s International Agriculture Program Mobility Grant, Arias spent three months this summer as an exchange student at the University of Udine, Italy completing individual research study in plant biotechnology.

“I have always wanted to come to FAMU to study agricultural biotechnology,” said Parker. “Working at the viticulture center gave me many exceptional research experiences. The research that happens in the center is one of the university’s best kept secrets.” Parker is now a horticultural education agent with the University of Florida.

“New Fruits” of the Small Fruit Research Program at the Center for Viticulture.

Colova said agriculture biotechnology research is a growing field, and FAMU is exposing students to its endless possibilities. “Our students are not only involved in cutting-edge agriculture technology, but they are traveling to other countries to interact with and learn from the best experts,” she said. “They are making fascinating discoveries that can be applied to the advancement of the agricultural sciences.” The FAMU Center for Viticultural Sciences and Small Fruit Research is an integral component of the College of Engineering Sciences, Technology and Agriculture (CESTA). Faculty and students are involved in a number of research projects on the muscadine grape and other small fruit that will help the viticulture industry in Florida become a viable industry. Visit www.famu.edu, click onto “Academics” “Colleges and Schools” CESTA “Research” and “Center for Viticulture and Small Fruit Research.”

“New Fruits” of the Small Fruit Research Program at the Center for Viticulture.

“Agricultural sciences is my first love, but I’m also pursuing a psychology degree,” said Arias. “I like to involve people in my research, so I want to create a niche with this double major.” Focusing on certain DNA regions of the chicory plant, Arias developed a genetic bar-coding system—a relatively new method that uses DNA to identify different species.

Future implications for bar-coding research hope to create devices with which genetic material from an organism can be scanned and information about that organism can be retrieved immediately. The bar-coding technique, first tested in 2004, is being proposed for use with animals and other living organisms. Arias is now working closely with Colova to continue to enrich his knowledge and experience in plant DNA identification.

“The function of education is to teach one to think intensively and to think critically. Intelligence plus character—that is the goal of true education.”

– Martin Luther King, Jr.
Ant communities are key components of the cacao ecosystem, and their diversity and community structure determines whether or not the cacao is affected by other insect pests. Ants are predators of other insects, but some species protect colonies of sap feed homoptera which can be significant cacao (a dried fatty seed similar to the cocoa bean) pests. Interactions between various ant species often determines if homoptera guarding species are abundant in a cacotal and hence if that particular parcel will have significant homopteran damage.

Some of the ants also cause problems when they sting human farm workers in cacotales. This often triggers a broadcast spraying of pesticides in an attempt to kill off the annoying worker ants. Better understanding of ant communities in western Ecuador could lead to less damaging and more effective ways of limiting contact between human and ant workers in cacotales.

The use of Beauvaria as a biocontrol agent of the black banna weevil is a promising alternative to Furadan, which is generally used by plantain producers in coastal Ecuador. However, Beauvaria is known to attack many different insect species and it is necessary to determine its effect on other soil and litter arthropods before it can be generally accepted as a preferred control agent.

The figure above is a plot of the total amount of research awards received for each of the last six (6) fiscal years. Also displayed is a three-year trailing average for the last four (4) fiscal years. The trailing average was performed to smooth year-to-year variations. The trailing average indicates that the awards received generally average to about $50 million per year with the last periods indicating a slight decline in awards received.

The histogram above shows research awards (orange) and research expenditures (green) for each of the past six (6) fiscal years. Note that because large multi-year awards are typically spent in the later stages of the award, expenditures may exceed award amounts for any given year. However, fiscal years in which the expenditures closely agree with those of award amounts can be attributed to effective project management.
The chart above illustrates the portion of research expenditures for each college, school or institute. The award is attributed to the principal investigator’s affiliation. As such, large institutional grants such as Teachers for a New Era (TNE), Title III, National Oceanic and Atmospheric Administration (NOAA), etc. are attributed to Non-Discipline Related since the principal investigator is the university president, provost or other administrator.

**TOTAL = $43,213,543**

The chart above gives a breakdown of the types of research awards received. The federal government represents 83% of all research awards with the state government providing 11%; the remaining 6% of research awards listed as others are from private industry.
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From the Editor’s Pen:

The FAMU Division of Research is ready to assist you in research related undertakings. However, we do not write proposals for you—afterall, you are the experts in your field. We will help with institutional processing of proposals; please assure you access the step by step progression, along with other research policies and procedures available at www.famu.edu, click onto “Administration” “Division of Research” “Sponsored Research”—“Funding Opportunities” and “Proposal Development.”

Meanwhile, be sure you’re registered at www.cos.com for input and feed-forward re: the latest interaction opportunities within the community of science; please check out the collaborative efforts across disciplines minimally. Then, tell us all about it!

Living in excellence,

O.S. Lamar, P.I.O.
Faculty Administrator
Public Information Officer (P.I.O.)
850.412.7936 (phone)
850.412.5096 (fax)
os.lamar@famu.edu
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