FLORIDA A&M UNIVERSITY
DIVISION OF RESEARCH

2014
ANNUAL REPORT
ON RESEARCH

DISCOVERING GREATNESS
AT FAMU

HIGHLIGHTING FISCAL YEAR:
JULY 1, 2013 TO JUNE 30, 2014
John S. Cooperwood, Ph.D., Associate Professor, College of Pharmacy and Pharmaceutical Sciences (CoPPS). Photo courtesy: James Moran, Ph.D., Assistant Director, Advancement/Alumni Affairs, CoPPS.
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Dear FAMU Supporters:

As the new leader of one of the finest institutions of higher learning, it is with great pleasure that I share with you the legacy and leadership of Florida A&M University, specifically when it comes to our commitment to the study and advancement of Science, Technology, Engineering and Mathematics education.

In this edition of the 2014 Annual Report on Research, you have the opportunity to learn more about FAMU’s achievements in the areas of research.

The FAMU Division of Research (DoR) is actively engaged in proposal submissions to conduct more cutting-edge research. FAMU has garnered outstanding award funding, but we are striving for the next level.

I am a forward-thinking administrator. So, I consider it a privilege to highlight some of the strides FAMU’s DoR is making in not only promoting research and academics, but also encouraging undergraduate and graduate students and professors to continue to conduct studies that are awarding and rewarding, as well as industry-impacting and life-changing.

In this Annual Report, you will see evidence of the care and compassion in place at our great institution, which is fueled by the passion to help identify areas of critical importance to help society, one study at a time.

As FAMU’s new president, I have envisioned and am now enabling our faculty to be assertively engaged in a comprehensive 21st century approach on how they too can impact the world starting right here in the Capital City of Tallahassee, FL. I am enhancing their facilities and academic culture to further help inculcate research, service, training and outreach efforts. FAMU’s research reach is global. From China and Japan, to Europe, Africa and the Americas. Our impact is now becoming even more pronounced.

This 2014 Annual Report on Research will hopefully entreat and inspire us all to eagerly continue FAMU’s research enterprise and the advantages of shared collegiality with humanity.

Sincerely,

Elmira Mangum, Ph.D.
President
Florida Agricultural and Mechanical University President Elmira Mangum, Ph.D. congratulates History Professor David Jackson, Ph.D. for his exceptional contributions to FAMU’s research community. Also pictured (L-R): School of Journalism & Graphic Communication Professor Bettye Grable, Ph.D., Vice President for Research K. Ken Reddix, Ph.D., and Interim Provost Rodner Wright.
Dear Supporters:

On behalf of the Division of Academic Affairs, I enthusiastically endorse the Division of Research (DoR) on its 2014 Annual Report on Research. This edition highlights the primary purposes of the DoR: supporting the University’s research mission and the programs that help to sustain it.

The DoR Annual Report not only showcases the type of work needed to meet our educational challenge of improving teaching and the learning environment of the University, but also provides a model framework for moving toward an even more effective and supportive educational environment, which is fostered by research endeavors and accomplishments.

Our faculty is the foundation of this great institution. I commend each of them for demonstrating the university’s motto Excellence With Caring through their research.

As we implement our plans and best practices for the next academic year, I believe that all of us will continue our commitment to make Florida A&M University its very best, bar none!

The DoR assists administrators, faculty, staff and students in their research endeavors; encourages collaboration and interdisciplinary activities, across campus and off campus; and promotes healthy partnerships within our diverse academic programs and their respective supporting areas.

Lastly, the Office of the Provost is grateful for the important role the DoR also plays in the University’s relationships with federal, state and local agencies, as well as corporations and foundations. It is invigorating to be a part of such an effective team of scholarships.

Sincerely,

Rodner B. Wright, AIA
Interim Provost and Vice President for Academic Affairs
Dear Supporters:

The Florida Agricultural and Mechanical University (FAMU) Division of Research (DoR) is committed to enhancing the University’s three-pronged approach to address and help resolve national and global challenges in medicine, science, agriculture, and the environment, to name a few. The ills of society related to our research enterprise are tasking, yet rewarding, as we strive to enhance the knowledge base of our constituents every day.

When it comes to publishing, sharing the wealth of knowledge with others is part and parcel in the survival of the researcher. This edition of the Annual Research Report reflects a variety of research activities across academic units where collaboration and excellence were the central theme.

This multidisciplinary report reflects several areas of the FAMU DoR. There is an emphasis on continual improvement in attracting and promoting diverse research. The pressing challenges of the 21st century demand professional, administrative research expertise to help fulfill the burgeoning needs of our global society.

The FAMU faculty is working to address, research and resolve some of the important problems of this decade by helping to combat health disparities and systemic problems plaguing humanity nationwide and globally.

I am proud to share with you that FAMU’s DoR continually strives to reach the goals of its vision statement: “Florida A&M University 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.”

Sincerely,
K. Ken Redda, Ph.D.
Professor and Vice President for Research
The Florida A&M University (FAMU) Division of Research (DoR) hosted its Fifth Annual Principal Investigators’ Appreciation and 2014 Researchers of the Year Awards Luncheon on Friday, April 18. President Elmira Mangum, Ph.D., served as the keynote speaker.

During the event called “In Recognition of Research Excellence With Caring,” President Mangum not only recognized all FAMU Principal Investigators (PIs), but also honored two of the nominees for their respective research accomplishments: Huijun Li, Ph.D., assistant professor, Department of Psychology, College of Social Sciences, Arts and Humanities, who received the Emerging Researcher Award and honorarium; and John Steven Cooperwood, Ph.D., associate professor of Medicinal Chemistry, College of Pharmacy and Pharmaceutical Sciences, received the Research Excellence Award and honorarium.

“This is a unique opportunity which allows us to publicly acknowledge our sincere gratitude to all of FAMU’s PIs,” said K. Ken Redda, Ph.D., professor and vice president for Research.

The FAMU Faculty Senate first sanctioned The Institutional Researcher Awards in 2010. Faculty members have since been recognized annually. The Research Awards Selection Committee Members are appointed by the Office of the Faculty Senate in consultation with the Office of the Vice President for Research. Evaluations of the nominees are conducted and finalists interviewed. Recommendations of research award recipients are submitted to the Office of the Faculty Senate and to the Division of Research, Office of the Vice President.
The National Science Foundation (NSF) Division of Materials Research has awarded FAMU a $100,000 grant to fund a project entitled “Early-concept Grants for Explanatory Research (EAGER): Magnetic Interrogation of Mesoscale Materials.”

EAGER is a materials research program that brings together the disciplines of physics, chemistry, biology and engineering. The grant dollars will fund a pilot program housed at the National High Magnetic Field Laboratory, in Tallahassee, which is the world’s highest-powered magnet laboratory.

“This will be the beginning of great research collaboration between FAMU and the National High Magnetic Field Laboratory, and will have a huge impact on the research capacity of FAMU,” said physics Professor Mogus Mochena, Ph.D., the project’s principal investigator.

The grant proposal was a collaborative effort between Dr. Mochena, chemistry Professor Nelly Mateeva, Ph.D., and FAMU-FSU College of Engineering Professor Subramanian Ramakrishnan, Ph.D. The project will also enlist the research talents of additional faculty members from FAMU’s Departments of Physics and Chemistry, the FAMU-FSU College of Engineering and faculty members from Florida State University’s Departments of Physics and Chemistry.

Dr. Mochena says the research will focus on multiple components, including sustainable energy production systems that take advantage of water splitting, which is the separation of water into oxygen and hydrogen with the intent of extracting hydrogen. Hydrogen is a clean source of energy and is the basis for what is known as the hydrogen economy, a system of delivering or storing energy using hydrogen. Researchers will study magnetic molecules as facilitators to speed up the releasing of oxygen during the splitting process.

The project will also explore ways of synthesizing novel hard and soft magnets that have the potential to substantially decrease the United States’ dependence on imported rare-earth metals. In addition, researchers plan to study a select series of peptides (shorter versions of proteins that consist of two or more amino acids), which self-assemble in water solutions to form nano-structured hydrogels. This research should result in a number of technological applications, such as drug delivery, tissue scaffolds for stem cell regeneration and antimicrobial/biodegradable packing.

Dr. Mochena believes the successful completion of the program will provide FAMU researchers with opportunities to acquire millions of dollars in additional grant funding from the NSF Partnership for Research and Education in Materials, as well as further the University’s efforts to help strengthen the nation’s science, technology, engineering and mathematics (STEM) workforce.
Friends--now Faculty—Join Forces to Foster Future Scientists

Fate fashioned a friendship between Clayton Clark, Ph.D., associate professor, Division of Civil Engineering, FAMU-FSU College of Engineering, School of Business and Industry’s Assistant Professor Jason Black, Ph.D., and College of Pharmacy’s Tiffany Wilson-Ardley, also an associate professor.

The three professors secured a grant of more than $700,000 from the U.S. Department of Education to assist the FAMU in attracting underrepresented high school students into its Program of Excellence In Science, Technology, Engineering and Mathematics or PE-STEM. By encouraging teenagers to pursue and excel in careers in the STEM disciplines, the trio’s summer program mission is to develop and strengthen research, leadership, and critical thinking skills among youths.

Trio of FAMU Faculty, all FAMU DRS alumni, recreate summer science program

Not all bonds are created equal. Consider the special bond shared by Drs. Jason Black, Tiffany Wilson Ardley and Clayton Clark III. These three members of the FAMU faculty, all natives of Tallahassee, have been friends for three decades, since they were classmates at FAMU DRS. Each benefited from a summer science program that their high school used to host, and each went on to earn at least a bachelor’s degree at FAMU. That’s a lot of shared history. Now the three professors are going back to their roots to re-establish the summer science program that was so instrumental in their own success.

Armed with a three-year, $700,000-plus grant from the U.S. Department of Education, Drs. Black, Wilson Ardley and Clark are launching PE-STEM — program of excellence in science, technology, engineering and math — for up to 30 high school students at their alma mater. “We want to help students get exposed to STEM and all of the opportunities that are there that they may not be aware of,” Clark, an environmental engineer at the FAMU-FSU College of Engineering, said. “I didn’t know about the things that were open to me until I was exposed to it in a summer program.”
The FAMU College of Agriculture and Food Sciences (CAFS) hosted world-renowned scientist Donald Sparks, Ph.D., as a component of its 2014 lecture series. Sparks is recognized internationally for his landmark research and writings on the kinetics and mechanisms of metal, oxyanion, and nutrient reactions at the biogeochemical interfaces. His pioneering studies on kinetic processes in soils and minerals include: the development of widely used and novel kinetic methods; the elucidation of rate-limiting steps and mechanisms over a range of spatial and temporal scales; and the coupling of real-time kinetic studies with in-situ molecular scale investigations.

Sparks’ lecture covered the intensive research and undergraduate/graduate internship opportunities at the University of Delaware’s Environmental Institute (DENIN), where he serves as director. Research and projects conducted at DENIN include: global food system threats, food security, soil contamination, and arsenic and water quality. Among the current projects being conducted at the institute is a community-based participatory research program in a Wilmington, Delaware neighborhood, experiencing legacy contamination and many interconnected issues often experienced by low-income, African-American communities in America.

“Dr. Sparks’ lecture at FAMU was significant to our administrators, faculty and students,” explained CAFS Dean Robert Taylor, Ph.D., about the impact of Sparks’ April 28 presentation, “they were afforded the honor of having a world-class scientist, arguably the best soil/environmental chemist in the world, come to CAFS to share his vast knowledge.”

As a result of Sparks’ visit, FAMU students were offered an opportunity to participate in internships at the research institute this summer and for future semesters.

Taylor added, “We are excited that Sparks, a person who has been awarded numerous national and international awards in the field of soil/environmental chemistry, including the Einstein Award by the Chinese Academy of Sciences, took the time to recruit students from FAMU to engage in summer internships and possible graduate training at a cutting-edge, integrated science and engineering facility.”
FAMU’s Division of Research garners support from each of its academic units, which helps to thoroughly represent the University’s research community and highlight its diverse infrastructure.

Selected excerpts:

**COLLEGE OF AGRICULTURE AND FOOD SCIENCES**

**Biochar Technology and the FAMU Research Initiative**

Yuch-Ping Hsieh, Ph.D., a professor of Wetland Ecology in the Center for Water and Air Quality at the College of Agriculture and Food Sciences (CAFS), has more than 30 years of research experience in biogeochemistry of carbon and sulfur cycles. His most recent research effort is in the study of forest fire on air quality. Hsieh is one of only two members among the faculty of the universities in the Southeastern U.S. selected to serve on the Agricultural Air Quality Task Force of the United States Department of Agriculture (USDA).

Hsieh’s spring 2014 presentation was part of CAFS’ lecture series and consisted of two parts: the pros and cons of biochar technology as we know them today and the results of his novel, Multi-Elemental Scanning Thermal Analysis (MESTA) method for the identification and characterization of solid substances or biochar characterization, and the design of a low-cost, yet highly efficient biochar producing system.

He has published more than 120 technical articles in his field, including more than 60 peer-reviewed papers and book chapters and is the editor of the book Ecology and Management of Tidal Marshes.

Hsieh is the inventor of the diffusion method for reduced sulfur analysis, direct organic sulfur analysis in environmental samples, multi-element (C, N, S and H) scanning thermal analysis and other ecological methods that is now used by many ecologists and biogeochemists. He also holds the patent of the co-invention of the MicroRespirometer technology.

His graduate student, Kristi Hatakka presented the results of her thesis research on switch grass biochar and its biodegradation in soil.

**FACULTY REELS IN EFFECTS OF REGULATIONS ON COMMERCIAL FISHING**

Previous industry research has shown that individual fishing quotas (IFQs) have had positive effects on increasing the technical efficiency and reducing the capacity of the red snapper fishery. However, no formal analysis had been conducted on the impact of the IFQ program on the productivity of this fishery. That’s until CAFS Assistant Professor Daniel Solis, Ph.D., got hooked on the subject matter.

With grant support from The National Oceanic and Atmospheric Administration, this Agribusiness Program professor, set a goal to analyze the impact of the IFQ program on the technical efficiency and composition of the Gulf of Mexico Red Snapper commercial fleet.

Drawing on a stochastic distance frontier model, which accounts for the multiproduct nature of commercial fish production, Solis discovered that IFQs enhanced the technical efficiency of the commercial fleet. Specifically, the analysis shows that these efficiency gains are mainly driven by the retirement of less efficient vessels in the fleet, and to a lesser extent, by efficiency gains of the remaining vessels.

For more details, please visit: [http://dsolisw.weebly.com/](http://dsolisw.weebly.com/)
USDA AWARDS FAMU MORE THAN $1.3 MILLION IN GRANTS

The United States Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) awarded three grants totaling more than $1.3 million. FAMU was among a select group of land-grant institutions with accepted proposals. The principal investigators for the grants are professors Neil James, Ph.D., Muhammad Haseeb, Ph.D. and Mehboob Sheikh, Ph.D. (pictured using the High Performance Liquid Chromatography for fractionation of sugars and amino acids).

“For nearly 125 years, FAMU has played a vital role in ensuring access to higher education and opportunities for underserved communities,” said Agriculture Secretary Tom Vilsack. “These competitively-awarded grants support high-quality research, teaching and extension activities, and support the continued leadership of 1890 institutions in the fields of agriculture, the environment and public health.”

Two of the grants—totally more than $450,000—were awarded through the 1890 Institution Research, Extension and Teaching Capacity Building Grants Program. The funds will support the university’s Agricultural Science programs while also strengthening the ties between other 1890 land-grant institutions, the USDA and private industry. The third grant—which exceeds $900,000—was awarded through the 1890 Facilities Grants Program to assist FAMU in acquiring and improving food science facilities, equipment and research libraries.

The grant dollars will contribute to the College of Agriculture and Food Sciences, its Cooperative Extension Programs and the continued efforts to play a critical role in teaching students to meet the high-quality, innovative research needs that are vital to the well-being of our nation’s food, fuel and fiber.

EXTENSION PROGRAMS:

Integrated Pest Management and Best Management Practices in Urban Agriculture Research/Outreach

The Integrated Pest Management (IPM) and Best Management Practices in Urban Agriculture, especially vegetables, fruits, and nut crops have made significant progress during the 2013-2014 fiscal year. The United States Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA), Extension Integrated Pest Management (EIPM) and 1890 Capacity Building Program provided the extramural grants for the two projects being carried out by faculty, students and collaborators.

“Enhancing the Capacity of Urban Agriculture in North Florida using Best Management of Farming Practices” was initiated to serve the minority and underserved students, and stakeholders over a three-year period (2012-2015). It is a partnership between FAMU and the University of Florida focusing on academic and extension components of the land-grant program.

Urban vegetable growers are an important clientele group of FAMU with a considerable scope to enhance their impact. A permanent site for training and demonstration to clientele and stakeholders has been established in the Center for Viticulture and Small Fruits Research (CVSFR).

Since its inception, this research project has provided opportunities for several graduates, undergraduates, and interns to work with experts and gain necessary knowledge and skills for their academic research. Preliminary data indicate that trap crop, plant-mediated pest management, and the use of selected chemicals permitted in organic crop production offers great promise to environment-friendly crop production and pest management.
STUDENT SELECTED FOR FIRST MENTORING AT PURDUE UNIVERSITY’S SCHOLARS PROGRAM

Jasmine A. Hall, a fourth-year Food Science major in the College of Agriculture and Food Sciences, attended the inaugural Mentoring@Purdue (MAP) Summer Scholar held June 22-24, 2014, on the campus of Purdue University in West Lafayette, Indiana.

Hall’s participation provided her with an opportunity to engage with future faculty members, meet with current and future students, and tour research, educational and recreational facilities at Purdue. Additionally, she interacted with deans and associate deans from the College of Agriculture, Graduate College and other university and community-affiliated organizations. It is Purdue’s hope that through these interactions, the summer scholars will pursue further study at Purdue University.

“This is a great accomplishment and a testament to the dedication Jasmine has displayed in her studies at Florida Agricultural & Mechanical University,” beamed Robert Taylor, Ph.D., CAFS dean and director of Land-Grant Programs. “It is also indicative of the good quality of some of our programs in CAFS.”

SCHOOL OF GRADUATE STUDIES AND RESEARCH

Graduate Student Makes Award-Winning Discovery in Apalachicola Forest

FAMU graduate student Latasha Tanner, who is pursuing her master’s degree in Entomology in the CAFS, recently received top accolades from the National Society for Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS).

Tanner ranked No. 3 in the nation in the MANRRS graduate poster competition for her research on the impact of invasive beetles in the Apalachicola National Forest. Her research helped uncover millions of dollars’ worth of possible damage to Florida’s forestry and agricultural industries.

She discovered a redbay ambrosia beetle in the Apalachicola Forest, which had the Laurel wilt fungus in its head—a fungus known to cause damage to forest trees. This could mean a potential $13 million a year problem for Florida’s avocado crop, which could have commercial and residential impacts.

Tanner collaborated with the Florida Department of Agriculture and Consumer Services’ Cooperative Agricultural Pest Survey (CAPS) Program and Division of Plant Industry (DPI) in identifying potential pathways of invasive bark beetle.

“She is a creative thinker with an eye for details and a devotion to logic, which serves her well in all of her activities,” said Lambert Kanga, Ph.D., an adviser to Tanner. “I hope I have set the stage to show other moms that you can do it – don’t give up.”
**COLLEGE OF SCIENCE AND TECHNOLOGY**

**Botany and Plant Physiology Professor Presents Research in Beijing, China**

“Natural Variation Associated with Seed Composition Traits to Improve Micronutrient Efficiency” is the title chosen by Cornell University-educated Professor Gokhan Hacisalihoglu to present at Maize Genetics in Beijing, China. This is a highly-selective conference that showcases outstanding multidisciplinary research in one of the most important crop plants worldwide. An international audience of more than 600 plant scientists and researchers gathered for four days in Beijing, China. Attendees had the opportunity to share research insights in Molecular Genetics, Developmental Biology, Quantitative Genetics, and Epigenetics.

Gokhan Hacisalihoglu, Ph.D., biology professor, presented research in Beijing, China at the 56th Maize Genetics Conference, March 13-16, 2014.

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**FAMU PLANT RESEARCH AT JAPAN’S NATIONAL INSTITUTE OF GENETICS**

Ramesh Katam, Ph.D., assistant professor in Molecular and Cellular Plant Biology (fourth from left), in the Department of Biological Sciences, visited the National Institute of Genetics in Mishima City, Japan. He held discussions with professor Nori Kurata (sixth from left) and her group on Applications of Proteomics Research in Agricultural Crops. Kurata is a member of the Science Council of Japan.

FAMU and the Japanese Institute collaborate with other institutes to conduct and discuss their diverse, yet related research topics.

Ramesh Katam, Ph.D., molecular and cellular plant biology professor (fourth from left), in the Department of Biological Sciences visited the National Institute of Genetics, Mishima City, Japan and held discussions with Professor Nori Kurata (fifth from left) and her group on Applications of Proteomics Research in Agricultural Crops. Professor Kurata is a member of the Science Council of Japan. FAMU and the Japanese Institute collaborate with other institutes to conduct and discuss their diverse, yet related research topics.
FAMU CHEMISTRY FACULTY AND STUDENTS BECOME INTEGRAL PART OF CHEMISTRY SOCIETY

At the 90th Florida Annual Meeting and Exposition (FAME), held on May 8-10, 2014, in Innisbrook, Palm Harbor, Florida, Department of Chemistry Associate Professor Nelly Mateeva, Ph.D. (left in picture) made history.

FAME is the largest forum organized by the Florida Section of the American Chemical Society (FLACS). Mateeva became the first FAMU professor to be elected as a Chair of FLACS.

The event brings together faculty and student researchers, industry representatives, distinguished speakers, publishers, and anyone interested in sharing the current trends in chemistry research. Mateeva also served as program chair of this year’s FAME meeting.

Her department college, Bereket Mochona, Ph.D., also served as an organic chemistry symposium organizer. He and Edith Onyeozili, Ph.D., took on the role as judges for the undergraduate and graduate poster competition.

FAMU undergraduates Duyen Luu, Kenley Herbert and Krista Cabret presented their research posters in the areas of environmental chemistry and organic chemistry. Their trip to FAME was sponsored by the Florida-Georgia Louis Stokes Alliance for Minority Participation at FAMU. Alaine Sharpe, who recently obtained her master’s degree in chemistry from FAMU entered Florida State University’s Medical School this summer, also presented at the meeting.

$762,000+ GRANT EMPOWERS FAMU CURRICULUM TO BE A LEADER IN STEM EDUCATION

Student-Centered Active Learning and Assessment Reform (SCALAR) National Science Foundation provided Florida A&M University with a grant totaling $762,389 for its Implementation Project in Sciences, Technology, Engineering, Mathematics (STEM) education.

SCALAR proposes to implement a series of innovative curricular and co-curricular initiatives that will ultimately position FAMU as a national leader in STEM education. The project involves a complete revamping of the undergraduate course curricula and instructional approaches in the areas of mathematics, chemistry, physics, biology, and computer science. All of the target program areas are housed in the College of Science and Technology.

The SCALAR project will serve as a model for the sustainable transformation of the undergraduate curriculum to incorporate research-based best practices in STEM education, at all minority-serving institutions.
**DOCTORAL PHYSICS STUDENT NOW NUCLEAR FELLOW**

Physics doctoral candidate Staci Brown, under the direction of her major professor, Lewis Johnson, Ph.D., was selected for the National Nuclear Security Administration (NNSA) Fellows Program. She started working at the Department of Energy in June 2014.

Brown also won a first place certificate (shown here) in September during the student poster competition at the 2013 National Symposium on Laser-Induced Breakdown

**FAMU PHYSICISTS PRESENT FINDINGS PROVING EXISTENCE OF INFINITE ENERGY**


They presented their research findings at the 45th DAMOP (Division of Atomic, Molecular and Optical Physics) meeting held June 2-6, 2014 in Madison, Wis. Their research on a long-standing debate about the possible existence of an infinite-energy Dirac Delta function ground was resolved in the affirmative—it does exist. This has implications for fusion energy and for the structure of space-time.

**DEPARTMENT OF MATHEMATICS RACKING UP RECOGNITION**

Representative Funded Mathematics Research

During the last five years, faculty members in the Department of Mathematics have published 15 articles in refereed journals. They are also PIs or co-Pis on sponsored research projects supported by the National Science Foundation, Department of Education, Army Research Laboratory and the Defense Advanced Research Projects Agency.

Collectively the Department has garnered funds in excess of $4.7 million, including a $2.5 million collaborative grant with the Iowa Regency schools for the Alliance for the Production of African American Ph.D. graduates in the mathematical sciences and an $870,000 interdisciplinary award with Biological and Agricultural Systems Engineering (BASE). Mechanical Engineering and Mathematics through the Army Research Laboratory.

Russell Wyland, Ph.D., deputy director of the Division of Research Programs at the National Endowment for the Humanities (NEH), conducted a workshop with the College of Social Sciences, Arts and Humanities on Wednesday, February 19, 2014. He spoke with faculty and administrators about applying for federal research money to support their teaching, research, and writing. Dr. Wyland also conducted a formal application-writing workshop at neighboring Florida State University, where he was joined by FAMU Assistant Professor of History Ameenah Shakir.

Dr. Wyland appeared on FAMU-TV’s Research Fundamentals with O. S. Lamar Sheffield, and met with other Division of Research staff. Wyland has been awarded research grants from the American Philosophical Society and the English-Speaking Union. He is the recipient of the 2000 VanArsdel Prize given by the Research Society for Victorian Periodicals.

History professor and chair of the Department of History, Political Science, Public Administration, Geography and African-American Studies, David H. Jackson, Jr., Ph.D., was recently honored with the American Historical Association’s (AHA) 2013 Equity Award. The AHA, established in 1884, is the oldest and largest professional historical association in the nation. Dr. Jackson received the award during the organization’s annual meeting held in January in Washington, D.C. The award is one of the association’s most distinguished scholarly and professional awards, and serves to honor individuals or institutions that have achieved excellence in recruiting and retaining underrepresented racial and ethnic groups in the historical profession.

AHA recognized Jackson for his achievements in “inspiring African American undergraduates to enter graduate programs in history and earn professional degrees,” and applauded him for being an “outstanding community leader and teacher.”

- Advanced fluid flow model for microbial fuel cell
- Advanced 3-dimensional gas flow model
- Outlined improvement for radiation detection
- Published paper in leading materials research journal
- Published conference paper for STEM conference
- Managed existing grant
- Wrote grant and gained additional external funding
- Established partnership with NASA-Glenn
- Wrote and delivered reports to funding agencies
POLITICAL SCIENCE PROFESSOR TACKLES SOUTH CHINA SEA TERRITORIAL DISPUTES IN NEW BOOK

In the book South China Sea: Energy and Security Conflicts, foreign policy analyst Christopher L. Daniels, Ph.D., FAMU assistant professor of political science, analyzes the core causes of the dispute over territorial claims in the South China Sea, which separates some of the world’s fastest-growing economies. Starting with the question of access to the billions of barrels of oil and trillions of cubic feet of natural gas presently thought to lie beneath the region’s territorial waters and islands, Dr. Daniels considers the race for resources and military dominancy along with the rapidly increasing domestic demand for electricity and industrial output of the regional players.

South China Sea: Energy and Security Conflicts takes on such troubling questions as the impact of this conflict on global oil and gas prices; China’s growth both economically and as a regional military hegemon; and the recent, often rocky, international efforts to mediate the conflict. In addition to policy recommendations for peaceful resolutions to this emerging international challenge, the book includes maps, graphs, primary sources, and overviews of key players—individual and institutional—in what may well be the next great conflict in East Asia. This work is ideal for scholars and students, researchers and diplomatic professionals, military officers and energy traders, and anyone interested in the energy and security politics of East Asia.

PSYCHOLOGY DEPARTMENT HOSTS 22ND ANNUAL IMHOTEP STUDENT RESEARCH CONFERENCE

FAMU hosted the 33rd Annual Black Psychology Theme Week and 22nd Annual Imhotep Student Research Conference April 7-12, 2014. Titled Forward: Assessment, Application and Integration of Past and Current Research for the Future Development of Individuals of African Descent, it provided a venue for undergraduate and graduate students of all disciplines to present original research. It was also an opportunity to network with students and faculty from across the country.

The gathering is designed to enhance the research skills and productivity of undergraduate and graduate students and to inspire them to become productive and conscious human beings. The conference included a Distinguished Lecture Series: Outstanding Black Psychologists; and a Tribute to Black Women: FAMU Undergraduate Psychology of Women Students.
EDUCATIONAL LEADERSHIP PROFESSOR GOES GLOBAL FOR EDUCATIONAL RESEARCH

Rose Campbell, Ed.D., continually focuses on research for improving student achievement, professional development for teachers, and enhancing leadership and administration for the K-12 schools. Exemplifying excellence in educational leadership and services, she spearheads Top Choice Educational Consultant Services, LLC. As professor, Dr. Campbell facilitated the International Research Conference as the National Association of African American Studies (NAAAS) international representative at the Universidad Autonoma de Coahuila in Saltillo, Mexico, May 18-22, 2014.

In collaboration with Kirk Gavin, Ed.D., Dr. Campbell has presented research projects focused on student learning gains, professional development for teachers, Florida Comprehensive Assessment Testing (FCAT), and outstanding leadership skills for principals and administrators. On February 13, 2014, they presented a paper on Common Core at the National Association of African American Studies’ National Conference in Baton Rouge, La. Finally, Drs. Campbell and Gavin were co-chairs of FAMU’s First University Research Summit and plans are currently underway for the next Research Summit.

COLLEGE OF EDUCATION
Professor Delivers Colloquium Keynote Address at Michigan State University

Patricia Green-Powell, Ph.D., interim dean of FAMU’s College of Education, delivered the keynote address at the Spring 2014 Raines Colloquium at Michigan State University (MSU)—East Lansing on February 27, 2014. Her talk was titled, “Historically Black Colleges and Universities (HBCUs): Past, Present and Future.”

She addressed the research value of institutional leadership and student affairs at HBCUs and the necessity of addressing the growing needs of college students. The Raines Colloquium is an annual event organized to foster intellectual, professional and personal growth among students, faculty and alumni at MSU.

Dr. Green-Powell was also selected to participate in the Historically Black Colleges and Universities (HBCU) College and School of Education Dean’s Think Tank at Rutgers University, the State University of New Jersey, in New Brunswick, June 10-12, 2014. The annual think tank brings together education leaders from around the nation to identify and form a plan of action to address issues facing HBCUs and teacher education.
$2.9 Million Grant Helps FAMU Continue To Address Health Disparities

Reprinted with permission from the Tallahassee Democrat’s Senior Writer, Doug Blackburn Wednesday, April 16, 2014, page 8A

Three top researchers at FAMU have learned that their federal funding to study health disparities — one of the largest grants in university history — has been renewed for another year.

To date, FAMU has received almost $69 million since 1985 from the U.S. Department of Health & Human Services’ National Institutes of Health to fund the university’s Research Center in Minority Institutions. FAMU is one of 20 schools nationwide participating in the funded research.

K. Ken Redda, Ph.D., professor and vice president for research at FAMU, is one of three co-principal investigators for the grant, which will provide $2.9 million during the coming year. He is joined by faculty members, Drs. Karam Soliman and Carl Goodman, both professors in the College of Pharmacy and Pharmaceutical Sciences.

Their diverse research involves numerous other schools and colleges, including allied health, biology, chemistry, engineering, nursing and technology, Dr. Redda said. They are working to develop less expensive, readily available and safe treatments for a variety of diseases, including cancer and diabetes.

“No. 1, we address diseases that affect minority populations,” Redda said. “Cancer is very important in this project. We do the basic research that is critical to the nation, and to Florida A&M University.”

The grant money will allow FAMU to upgrade its labs and strengthen its infrastructure for research, Soliman said.

“Our institution is relatively young in terms of research and research training. This is probably the only available funding for our young faculty at FAMU,” Dr. Soliman said. “It’s critically important; this grant helps us tremendously.”
STUDENT RESEARCH FORUM CONTINUES ITS PRESENTATIONAL EXCELLENCE WITH CARING

Above, K.E.A. Soliman, Ph.D., Distinguished Professor and B. Georges, one of his many student research protégés (over the decades) share their research findings at the 2014 Student Research Forum. Soliman also serves as principal investigator and RCMI program director. In white lab coat (at right) is one of the forum’s adjudicators, John Steven Cooperwood, Ph.D., 2014 Research Excellence Award Recipient. Photo courtesy of Ebenezer T. Oriaku, Ph.D., CoPSS faculty.

HIGHLIGHTS FROM FAMU’S 2013-2014 NIH RCMI PROGRAM RESEARCH SEMINARS

“Epigenetics In Cancers”
Jong Y. Park, Ph.D.
Associate Member, Research and Clinical Trials
H. Lee Moffitt Cancer Center & Research Institute
Tampa, Florida
January 9, 2014

“Drug Discovery, Development and Commercialization”
William E. Burmeister, M.S.
CEO, W. Burmeister International, LLC
Milan, Michigan
April 16, 2014

“Neuroinflammation, Arginine Metabolism, and Polyamines: Disorder, The Commander and Regulators of Neuropathology”
Daniel C. Lee, Ph.D.
Assistant Professor, Division of Basic Pharmaceutical Sciences
University of South Florida (USF) College of Pharmacy, USF Health
Byrd Alzheimer’s Institute
June 12, 2014
SCHOOL OF ARCHITECTURE AND ENGINEERING TECHNOLOGY

Architectural Research Awarded Several Grants, Pursuing Additional Funding

Research Grants—Awards Received:

- Kobelo, Dorreen, “Florida Occupant Protection Program,” Florida Department of Transportation ($25,113).

Research Grants—Proposals Submitted:

- Li, Chao. “FAMU Engineering Technology Scholarships (FAMU_ETS)” National Science Foundation.
- “Orange County Elementary Schools: The Indoor Environment and FCAT Scores.”
- Pabon-Charneco, Arleen. “San Juan de Puerto Rico: Five Hundred Years of Experimentation.”
- Pabon-Charneco, Arleen. “Living the Puerto Rico: Five Centuries of Domestic Architecture.”

COLLEGE OF ENGINEERING (FAMU-FSU)

College of Engineering Continues Joint-Formula of Success

The Florida A&M University (FAMU) - Florida State University (FSU) College of Engineering has as its positive and forward-thinking motto: “Two Universities, One College, Twice the Opportunities” which helps account for the relationship, cooperation and goodwill between FAMU and FSU top administrators and researchers.

Title III funding helps support the learning community in the FAMU-FSU College of Engineering and is designed to further strengthen the engineering undergraduate program, as well as assist minorities in the graduate program in attaining their Ph.D. degrees. The research expertise/focus areas are energy and power: production and storage; transportation infrastructure and structural monitoring; materials: polymers and nanomaterials; robotics and aerospace/aero-propulsion; environmental sustainability and water resources; communication, IT and Cyber Security; biomedical and imaging, along manufacturing and operations research.
Environmental Science Student Engages in NOAA Research; Awarded $45,000 Scholarship

While many college students are relaxing during the summer, doctoral candidate Daryl Sibble is taking a different route. Sibble is spending his summer wrapping up groundbreaking research at an internship with the National Oceanic and Atmospheric Administration (NOAA). A student in the School of the Environment, Sibble is one of only two students to receive NOAA’s first Educational Partnership Program (EPP) Graduate Research and Training Scholarship. This national scholarship program affords him $45,000 to support his participation in extensive research opportunities with NOAA.

Sibble’s research focuses on yielding information that will help develop optimum practices for the application of fertilizer in agriculture, specifically fertilizer that uses ammonium nitrate, which can be a threat to human health. This threat occurs when plants do not use all of the fertilizer added to soil and as a result some of the nitrate is removed with rainwater runoff and some of the ammonium becomes ammonia. The ammonia leaves the soil as a harmful gas and enters the atmosphere. His internship and the majority of his research is being conducted at the Atmospheric Turbulence and Diffusion Division of the NOAA Office of Oceanic and Atmospheric Research, Air Resources Laboratory, located in Oak Ridge, Tenn. He also spent time measuring weather and ammonia flux data at the University of Illinois’ energy farm.

Because of his research, Sibble recently co-authored the article, “Understanding the Role of Ammonia in Air Quality,” in the Southern Climate Monitor with his NOAA advisor LaToya Myles, Ph.D., a FAMU alumna and physical scientist at NOAA’s Air Resources Laboratory and fellow FAMU student Jason Caldwell. Sibble describes his experience as “priceless” and attributes his success at NOAA to the mentorship of Myles and to the foundation laid for him at FAMU, the lead institution of NOAA’s Environmental Cooperative Science Center (ECSC). “FAMU prepared me for this internship in multiple ways,” said Sibble. “My advisor, Elijah Johnson, Ph.D., who is very proficient in environmental computer modeling and conducted research at the Oak Ridge National Laboratory, is using his academic and work experience to advise me on multiple facets of this internship.”

Sibble also credits FAMU Professor Marcia Allen Owens, J.D., Ph.D., associate professor of Environmental Science and Policy, along with ECSC Director Michael Abazinge, Ph.D., for supporting his application and helping him develop as a research professional.
The American Council on Education (ACE) has announced that Wanda Ford, D.M., interim executive director of Title III Programs at FAMU has been named an ACE Fellow for the 2014-15 academic year. The ACE Fellows Program, established in 1965, is designed to strengthen institutions and leadership in American higher education by identifying and preparing emerging leaders for senior positions in college and university administration. Thirty-one Fellows, nominated by the senior administration of their institutions, were selected this year following a rigorous application process.

Ford has more than 20 years of experience in higher education administration. In her current capacity, Ford is responsible for overseeing the programmatic and financial aspects of approximately $11 million in Title III funding awarded to the university by the U.S. Department of Education. During her tenure at FAMU, she has served as director of sponsored programs and director of contracts and grants in the Division of Research, as well as associate controller.

The ACE Fellows Program combines three retreats on higher education issues organized by ACE; interactive learning opportunities; campus visits and placement at another higher education institution to condense years of on-the-job experience and skills development into a single semester or year. Ford’s fellowship will include tackling an issue of focus for FAMU, while spending the next academic year working with a college or university president and other senior officers at a host institution.
SCHOOL OF BUSINESS AND INDUSTRY

BUSINESS PROFESSOR TREKS THE GLOBE ADVOCATING FOR ENTREPRENEURISM

Some say 17,405 kilometers. Others say 10,815 miles. Either way, it’s the distance FAMU School of Business and Industry (SBI) Professor LaTanya White traveled last fall to spread her message of entrepreneurial education and access. Her trip to Bali, Indonesia, was a life-changing experience for White that took her advocacy to the global stage. She shared highlights of her journey in a presentation titled, “THE POWER OF ‘CAN’: One Woman’s Challenge to the Global Entrepreneurial Community” during the spring semester at the President’s Coffee, a quarterly business meeting hosted by the Big Bend Minority Chamber of Commerce. The event was held at the Pittman Conference Center at the Riley House/Museum.

“Entrepreneurism is a hot topic again,” said Professor White, who is also the successful owner of 71 Proof; a beverage catering company that services the southeast region of the United States. “We need to make sure that minorities realize equal access to educational and business opportunities in this new entrepreneurial ecosystem that’s being constructed around the world.” White says access to entrepreneur-focused networks where learning and development take place must be inclusive.

“Professor White lives, breathes and sleeps her passion for ensuring that all students and adults are exposed to and engaged in global entrepreneurship,” said FAMU SBI Dean Shawnta Friday-Stroud. “Her presentation will not only leave you inspired, but more important, it will force you to think outside of the box about how you can contribute to her movement, her passion of Global Entrepreneurism.”

FAMU SUPPORTER, NIMHD DIRECTOR RETIRES AFTER 24 YEARS OF FEDERAL SERVICE

John Ruffin, Ph.D., former director of the National Institute on Minority Health and Health Disparities (NIMHD) with the National Institutes of Health (NIH), retired with a congratulatory reception in his honor on Tuesday, May 20, 2014.

“FAMU has benefitted from an excellent working relationship with Dr. Ruffin’s office at NIH. We received millions of dollars over the past 30 years. He has answered all our questions and he has provided all the necessary assistance we needed. This speaks volumes to NIH’s unprecedented support of FAMU’s research infrastructure, our ongoing endeavors and noteworthy accomplishments,” said K. Ken Redda, Ph.D., professor and vice president for Research.

On behalf of FAMU, Dr. Redda presented Dr. Ruffin with a congratulatory letter from President Elmira Mangum, Ph.D., a framed certificate of commendation from the University, along with a commemorative plaque from the FAMU Division of Research for his extraordinary service to FAMU and to the nation and for his unwavering service to help eradicate health disparities and advance minority health. Since joining NIH in 1990, Ruffin has been a tireless champion and trained more than 3,000 health professionals, while organizing numerous health disparities summits. For more than 24 years, Ruffin has helped provide support for research and training to FAMU’s biomedical research community.
RIGHT NOW NEWS TO USE
Florida Certified Contract Manager Update

ALL FAMU contract managers, i.e., principal investigators, project managers who are managing contracts from a state agency should take the “Advancing Accountability Class” provided by the Department of Financial Services (DFS). Training dates for the next calendar quarter will be announced in an Agency Addressed Memorandum. Agency Addressed Memoranda are located on the DFS website at: www.myfloridacfo.com/Division/AA/Memos/default.htm.

INNOVATION SHOWCASE

Friday, November 7, 2014
4 p.m. to 7 p.m.

Florida Agricultural and Mechanical University
Division of Research, The Office of Technology Transfer

Extends to you a Special Invitation to meet with the inventors and hear about their extraordinary innovations.

FAMU FOUNDATION
625 EAST TENNESSEE STREET
TALLAHASSEE, FL 32308
(850) 412-7232

“Innovating Today for a Better Tomorrow”
FAMU DIVISION OF RESEARCH FINANCIALS (FY 2013-2014)
2013-2014 Awards by Academic Unit

<table>
<thead>
<tr>
<th>Academic Unit</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Administration</td>
<td>$16M</td>
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<tr>
<td>College of Pharmacy</td>
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<tr>
<td>College of Agriculture &amp; Food Sciences</td>
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<tr>
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<tr>
<td>College of Engineering</td>
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<tr>
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<td>School of Allied Health Sciences</td>
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<td>Total Amount</td>
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2013-2014 Proposals by Academic Unit

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### FLORIDA A&M UNIVERSITY FISCAL YEAR 2013-2014

#### Research Awards by Sponsor

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<td>State of Florida</td>
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<td>U.S. Nuclear Regulatory Commission</td>
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#### TOTAL AMOUNT

$42,493,019

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### Summary of Sponsored Research Activity

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<tr>
<td>Awards Received</td>
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<tr>
<td>New Awards Received</td>
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<tr>
<td>Continuations &amp; Supplements</td>
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#### Total Sponsored Funding

$42,493,019
ENERGYWATERFOODNEXUS

INTERNATIONAL SUMMIT ON SUSTAINABLE INDUSTRY SOLUTIONS FOR GLOBAL COMMUNITIES

Hosted By

FLORIDA A&M UNIVERSITY

In Collaboration with

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Botswana International University of Science & Technology,
University of Miskolc, Hungary, and, Biopolus Institute, Hungary

MARCH 26-28, 2015

www.famuenergywatermnexus.org
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www.famu.edu/DOR_division_of_research

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