

JACKSON STATE UNIVERSITY DIVISION OF RESEARCH AND FEDERAL RELATIONS RESEARCH ANNUAL REPORT 2016-2017

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AND AWARDS (FY 2016 - 2017)

VISION

THE DIVISION WILL SERVE AS A LEADER IN PROMOTING EXCELLENCE AMONG ALL UNIVERSITY SCHOLARS AND BE RECOGNIZED AS A MODEL IN DEVELOPING MULTIDISCIPLINARY COLLABORATIONS THROUGHOUT THE CAMPUS AND THROUGHOUT LOCAL, NATIONAL, AND INTERNATIONAL COMMUNITIES. THE DIVISION HAS PRIMARY RESPONSIBILITY FOR ADVANCING RESEARCH AND NURTURING EXCELLENCE, SCHOLARLY ENGAGEMENT, CREATIVE ENDEAVORS, AND INNOVATION AT THE UNIVERSITY.

THE DIVISION FULFILLS ITS MISSION BY WORKING PROACTIVELY WITH FACULTY AND STAFF TO DEVELOP THEIR EXTERNAL FUNDING INTERESTS, IDENTIFYING APPROPRIATE FUNDING OPPORTUNITIES FROM PUBLIC AND PRIVATE SOURCES, AND PROVIDING ASSISTANCE WITH ALL OF THE ELEMENTS OF PROPOSAL DEVELOPMENT, SUBMISSION, AND ACCEPTANCE OF CONTRACTS, GRANTS, AND OTHER AWARDS.

THE DIVISION ENCOURAGES COLLABORATION AND PARTNERSHIPS THROUGH INTERDISCIPLINARY RESEARCH ACTIVITIES ON CAMPUS AND EXTERNALLY.

THE DIVISION PROTECTS AND MANAGES THE INTELLECTUAL PROPERTY OF THE UNIVERSITY AND ITS RESEARCHERS.

THE DIVISION ALSO IMPLEMENTS AND ENSURES COMPLIANCE WITH UNIVERSITY, AGENCY, STATE, AND FEDERAL POLICIES PERTAINING TO GRANTS AND CONTRACTS RELATED TO SPONSORED ACTIVITIES.

MISSION

FUNDING SOURCE	COUNT	TOTAL
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	1	\$7,428.00
NATIONAL ENDOWMENT FOR THE HUMANITIES	2	\$256,185.00
NATIONAL INSTITUTES OF HEALTH	11	\$4,680,851.00
NATIONAL SCIENCE FOUNDATION	20	\$11,828,092.00
NUCLEAR REGULATORY COMMISSION	1	\$400,000.00
U.S. DEPARTMENT OF AGRICULTURE	1	\$2,500.00
U.S. DEPARTMENT OF DEFENSE	12	\$4,692,377
U.S. DEPARTMENT OF EDUCATION	6	\$9,659,948.00
U.S. DEPARTMENT OF JUSTICE	1	\$300,000.00
TOTAL FEDERAL	55	\$31,827,381.00
STATE AGENCIES	12	\$1,962,514.00
PRIVATE/CORPORATE BUSINESS AND INDUSTRY	12	\$1,131,629
FOUNDATIONS AND NON-PROFIT GROUPS	19	\$838,193.00
OTHER IN-STATE UNIVERSITIES	14	\$1,553,195.00
OTHER OUT-OF-STATE UNIVERSITIES	20	\$3,980,473.00
TOTAL LOCAL GOVERNMENTS	3	\$106,204.00
TOTAL STATE, PRIVATE, CORPORATE AND OTHER SOURCES	80	\$9,572,208.00
GRAND TOTAL OF ALL EXTERNAL FUNDING	135	\$41,399,589.00

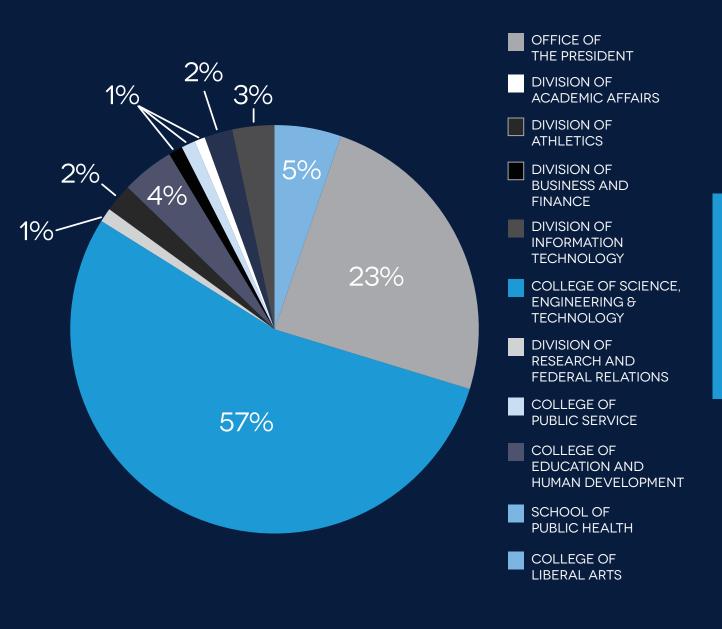
FUNDING Sources Fy 2016 -2017

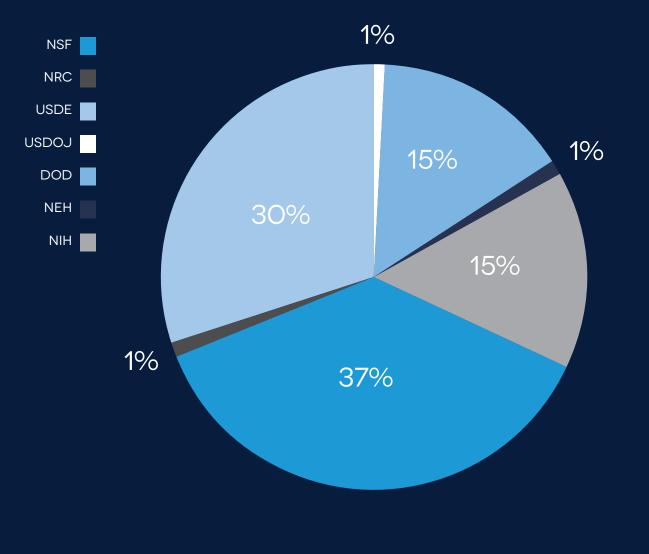
FUNDING SOURCE	COUNT	TOTAL
COLLEGE OF BUSINESS	3	\$273,896.00
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT	12	\$1,369,463.00
COLLEGE OF LIBERAL ARTS	14	\$819,075.00
COLLEGE OF PUBLIC SERVICE	3	\$289,831.00
COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY	75	\$23,534,876.00
DIVISION OF ACADEMIC AFFAIRS	4	\$352,800.00
DIVISION OF ATHLETICS	1	\$952,500.00
DIVISION OF BUSINESS AND FINANCE	1	\$10,000.00
DIVISION OF INFORMATION TECHNOLOGY	2	\$1,500,000.00
DIVISION OF INSTITUTIONAL ADVANCEMENT	1	\$3,500.00
DIVISION OF RESEARCH AND FEDERAL RELATIONS	2	\$592,609.00
OFFICE OF THE PRESIDENT	6	\$9,306,165.00
SCHOOL OF JOURNALISM AND MEDIA STUDIES	1	\$128,588.00
SCHOOL OF PUBLIC HEALTH	10	\$2,266,286.00
GRAND TOTAL OF ALL EXTERNAL FUNDING	135	\$41,399,589.00

FUNDING DISTRIBUTION FY 2016 -2017











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NUMBER OF PROPOSALS SUBMITTED: 158 DOLLAR AMOUNT OF SUBMISSIONS: \$58,850,671

FUNDING BY STATE, PRIVATE, CORPORATE AND OTHER FY 2016 - 2017



RESEARCH EXPENDITURES

AGENCY	AMOUNT
ACADEMY OF APPLIES SCIENCES	17,441.07
U.S. ARMY	379,956.61
BATELLE	10,310.66
BOARD OF REGENTS OF UNIVERSITY SYSTEM @ GEORGIA	11,378.00
CLARKSON AEROSPACE	146,704.46
CREIGHTON UMC	(9,510.00)
DEPARTMENT OF ENERGY	165,280.07
DEPARTMENT OF HEALTH AND HUMAN SERVICES	191,585.92
DEPARTMENT OF HOMELAND SECURITY	343,685.74
DEPARTMENT OF JUSTICE	26,836.51
ENGINEER RESEARCH & DEVELOPMENT CENTER (ERDC)	1,912,669.29
FLORIDA A & M UNIVERSITY	172,835.10
GEORGIA INSTITUTE OF TECHNOLOGY	56,798.45
HOWARD UNIVERSITY	209,306.37
MEHARRY MEDICAL COLLEGE	(4,518.01)
MOREHOUSE SCHOOL OF MEDICINE	1,434,499.51
MISSISSIPPI ARTS COUNCIL	4,100.00
MISSISSIPPI DEPARTMENT OF EDUCATION	213,572.43
MISSISSIPPI DEPARTMENT OF HEALTH	1,138.86
MISSISSIPPI HUMANITIES COUNCIL	5,150.00
MISSISSIPPI OFFICE OF HIGHWAY SAFETY	44,098.48
MISSISSIPPI STATE UNIVERSITY	340,881.68
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2,476.00

AGENCY	AMOUNT
NATIONAL ENDOWMENT OF THE HUMANITIES	170,536.52
NATIONAL INSTITUTE OF STANDARD & TECHNOLOGY	30,849.07
NATIONAL INSTITUTES OF HEALTH	5,112,504.94
NATIONAL SCIENCE FOUNDATION	5,846,766.47
NUCLEAR REGULATORY COMMISSION	193,294.49
OFFICE OF NAVAL RESERVE (ONR)	228,160.95
OTHER NON FEDERAL ENTITIES	3,007,702.94
RAND CORPORATION	26,941.89
SAVANNAH RIVER NUCLEAR SOLUTIONS	39,908.12
TECHNOLOGY STUDENT ASSOCIATION	34,668.42
TEXAS A&M UNIVERSITY @ GALVESTON	48,039.96
UNIVERSITY OF MISSISSIPPI MEDICAL CENTER	250,524.85
UNIVERSITY OF ALABAMA – BIRMINGHAM	149,928.88
UNIVERSITY OF ARKANSAS	253,812.69
UNIVERSITY OF CALIFORNIA - SAN DIEGO	63,053.00
UNIVERSITY OF ILLINOIS - CHICAGO	33,935.85
UNIVERSITY OF MICHIGAN	78,098.38
UNIVERSITY OF MISSISSIPPI	356,800.38
UNIVERSITY OF NORTH CAROLINA	371,517.84
UNIVERSITY OF SOUTHERN MISSISSIPPI	133,346.61
US DEPARTMENT OF EDUCATION	11,373,524.35
US DEPARTMENT OF TRANSPORTATION	2,272.56
FY17 CUMULATIVE EXPENDITURES	33,482,866.36



RESEARCH FOCUS AREAS

COMPUTATIONAL AND DATA ENABLED SCIENCE AND ENGINEERING CYBER SECURITY, CYBER WARFARE, MARITIME PORT SECURITY, AND NATIONAL INTELLIGENCE ENVIRONMENTAL SCIENCE, CIVIL AND ENVIRONMENTAL ENGINEERING PUBLIC HEALTH, HEALTH SCIENCES AND HEALTH DISPARITIES SOCIAL WORK, COMMUNITY ENGAGEMENT AND OUTREACH CYBERLEARNING, EDUCATION, STEM EDUCATION AND WORKFORCE DEVELOPMENT MATERIALS SCIENCE AND ENGINEERING AND NANOSCALE SCIENCE AND TECHNOLOGY INNOVATION, ENTREPRENEURSHIP, ECONOMIC AND SMALL BUSINESS DEVELOPMENT **GLOBALIZATION**

RESEARCH EXECELLENCE HIGHLIGHTS



NSF STEM STARS Program Is Preparing Teachers to Provide High-Quality STEM Education for all Students

Jackson State University (JSU) was awarded a five-year \$3.7 million National Science Foundation (NSF) grant to address the challenge of providing high-quality science, technology, engineering and mathematics teachers for all students in high-need school districts. The project titled "Science, Technology, Engineering and Mathematics Scholars Teacher Academy Resident System or STEM STARS" was developed from lessons learned during a successful three-year pilot project led by JSU in partnership with Xavier University of Louisiana (XULA) where 32 new science and mathematics teachers were licensed and placed in high-need schools.

Dr. William McHenry, executive director of the Mississippi e-Center Foundation and professor of chemistry at JSU, serves as the principal investigator. Dr. Daniel Watkins, dean of the College of Education at JSU; Dr. Renee Akbar, division chair of Educational Leadership at XULA; Dr. Mary E. Benjamin, vice chancellor for Research, Innovation and Economic Development at the University of Arkansas at Pine Bluff (UAPB); and Dr. Melvin Davis, executive director of the Mississippi Urban Research Center (MURC) at JSU, serve as co-principal investigators on the project.

STEM STARS is a partnership between JSU, XULA, UABP and diverse urban and rural school districts in Jackson, Mississippi; New Orleans, Louisiana; and Pine Bluff, Arkansas. This region serves more than 175,000 students. STEM STARS program will prepare 120 teacher residents who will gain clinical, mentored experience and develop familiarity with local schools, which is designed to enhance teacher retention and diversity rates. The Mississippi e-Center at JSU leads the NSF initiative to produce these 120 new STEM STARS (science and mathematics teachers) for the Arkansas-Louisiana-Mississippi region, and develop and test a research-based strategy.

Dr. McHenry said, "The goal of STEM STARS is to democratize STEM education by providing effective science and mathematics teachers in high-need school districts. Research shows that the most important resources in high-need schools are first-rate teachers. We will adopt the medical school clinical model (TRA-Teacher Residency Academies) to establish a pathway for STEM graduates to enter the classrooms. We will use the TRA model to recruit, license, induct, employ and retain middle school and secondary science and mathematics teachers for high-need schools in the Deep South."

"We are pleased and honored to join with these two great institutions on a major project to greatly enhance the number and quality of exceptional STEM teachers. The NSF funds for this partnership will enable our STEM STARS to shine brightly in their interactions with our STEM students on campus and as they bring advanced teaching techniques to transform the educational experiences for students in schools in our communities," said Dr. Laurence B. Alexander, chancellor of the UAPB.

"We know that the cultivation and nurture of the scientific and engineering talent among our K-12 students requires outstanding teachers of science and mathematics, (who are) able to encourage passion and imagination. We at Xavier University of Louisiana are very pleased to partner with colleagues at University of Arkansas at Pine Bluff and at Jackson State University to prepare such teachers, STEM STARS, and to assure the readiness of students in Louisiana, Mississippi and Arkansas," said Dr. C. Reynold Verret, president of XULA.

Data show that there is a clear need for a research-driven intervention to increase the number of licensed science and mathematics teachers in the U.S. The STEM STARS partnership with its focus on middle school and secondary science and mathematics helps make it unique in its approach to increasing the number of high quality, culturally responsive and licensed middle and secondary science teachers prepared to teach in the nation's high-need urban and rural schools. Project outcomes are expected to inform the design of additional Teacher Residency Academies that will serve as novel alternatives to the traditional teacher preparation and post-baccalaureate certification programs common throughout the nation. The 120 teacher residents supported by the program will obtain state licensure/certification in science teaching, a master's degree and initiation to National Board certification.

STEM STARS is the only program of its type to explicitly incorporate National Board standards and assessments into its requirements.

High-Producing Researchers Honored for Contributions to University's Success

Seventeen JSU researchers were honored for achieving the top-funded projects during FY 2015-2016. The award reception was hosted by interim President Rod Paige and Mrs. Stephanie Nellons-Paige.

Collectively, the 17 principal investigators brought in approximately \$20 million in external funds for FY 2015-2016. This represents about 58 percent of the total funding received during that fiscal year. Individually, each honoree has brought in between half a million dollars and \$6 million in external funds during the fiscal year. Major awards were received from agencies such as the National Science Foundation, the National Institutes of Health, the U.S. Department of Education, the U.S. Department of Homeland Security, and the U.S. Army Corps of Engineer Research and Development.

All honorees received a trophy and cash award funded by the Mississippi e-Center Foundation. The honorees who were applauded for success in obtaining external funding were:

Donna A. Antoine-Lavigne, M.P.H., Ph.D.

Principal Investigator, Jackson Heart Study Community Outreach Center, School of Public Health

Deborah F. Dent, Ph.D.

Chief Information Officer

Mehri Fadavi, Ph.D.

Chair and Professor, Department of Chemistry, Physics, and Atmospheric Sciences College of Science, Engineering and Technology

Ashton T. Hamme, II, Ph.D.

Professor, Department of Chemistry, Physics, and Atmospheric Sciences College of Science, Engineering and Technology

Fengxiang Han, Ph.D.

Associate Professor, Department of Chemistry, Physics, and Atmospheric Sciences College of Science, Engineering and Technology

Glake Hill, Ph.D.

Associate Professor, Department of Chemistry, Physics, and Atmospheric Sciences College of Science, Engineering and Technology

Jerzy Leszczynski, Ph.D. Professor and President's Distinguished Fellow, Department of Chemistry, Physics, and Atmospheric Sciences College of Science, Engineering and Technology

Lin Li, Ph.D.

Associate Professor, Department of Civil & Environmental Engineering and Industrial Systems & Technology College of Science, Engineering and Technology

Yadong Li, Ph.D.

Professor, Department of Civil & Environmental Engineering and Industrial Systems & Technology College of Science, Engineering and Technology

William E. McHenry, Ph.D.

Professor, Department of Chemistry, Physics, and Atmospheric Sciences Executive Director, Mississippi e-Center Foundation

Loretta A. Moore, Ph.D.

Professor, Department of Electrical & Computer Engineering and Computer Science College of Science, Engineering and Technology

Marinelle Payton, M.D., Ph.D., M.S., M.PH.

Chair and Professor, Department of Epidemiology and Biostatistics Principal Investigator, Jackson Heart Study Graduate Training and Education Center, School of Public Health

Paresh Chandra Ray, Ph.D.

Professor, Department of Chemistry, Physics, and Atmospheric Sciences College of Science, Engineering and Technology

Paul B. Tchounwou, Sc.D., F.A.B.I., I.O.M.

Professor and Presidential Distinguished Professor, Department of Biology Associate Dean, College of Science, Engineering and Technology

Daniel Watkins, Ph.D. Dean

College of Education and Human Development

Robert W. Whalin, Ph.D.

Professor, Department of Civil & Environmental Engineering and Industrial Systems & Technology College of Science, Engineering and Technology

Pao-Chiang Yuan, Ph.D.

Professor, Department of Civil & Environmental Engineering and Industrial Systems & Technology College of Science, Engineering and Technology

It's All About the Children with Visual Impairments! JSU's Deep South Synergy (DS2) TVI Project Funded

The United States Department of Education's, Office of Special Education Programs (OSEP) awarded \$1,250,000 to the College of Education and Human Development for its Deep South Synergy (DS²) TVI: Training Teachers of the Visually Impaired to Serve Children in the Deep South. The grant is a five-year personnel preparation project designed to train 30 profession-ready teachers to serve high needs children with visual impairments.

This Personnel Preparation program will assist Mississippi in meeting its responsibility for providing personnel to serve children with visual disabilities. The original grant proposed to resurrect its endorsement program in visual impairments through its Special Education department. But, compelling data showed there is critical need for well-trained profession-ready teachers of visually impaired students (TVIs) with advanced specialized training at the local, state and national levels. JSU was funded and charged by OSEP to develop a master's training program to remediate the critical personnel deficit of teachers of the visually impaired. Subsequently, support was received for a planning year to facilitate this initiative. Starting January 2018, JSU will once again provide advanced training for candidates to obtain a K-12 endorsement in visual impairments, and will offer a Master of Science in Special Education with a concentration in Visual Impairments degree. Program funds will also support selected candidates with scholarships to pay for tuition, books, and stipends to cover licensure fees and other related programmatic needs.

Dr. Glenda Windfield, Project Director, knows she sounds like an old-fashioned LP with a scratch on the vinyl. That's because whenever she talks about the grant she is repetitive stating the project's mantra--"It's ALL about the children with visual impairments!" She reminisces about accidentally beginning her teaching career at

Mississippi School for the Blind as its band director. She reflects how, "It was at the school that I discovered we were kindred spirits". She explained her epiphany as, "Forgive the pun out of sight, out of mind. But, prior to my employment, I'd never really given deep thought about the plight of individuals who are visually impaired. Over time I found our commonalities. Just as one's skin color has been the premise for some negative influences in society to stereotype, discriminate and exclude a minority; the same outcomes apply to individuals with visual impairments. I taught, met and read about many talented individuals who were blind/visually impaired who were overlooked, perceived incapable to learn and work outside of sheltered workshop settings and relegated to menial positions in society because of this disability. Living in majority sighted world has inherent limitations; but lack of a quality education, misinformation and low expectations compounds the futures of children with visual impairments I every aspect of their lives. Democratization for these children begins with recognizing they and their parents have dreams just like their sighted peers. It can't be dispelled that their life's narrative changes with exceptional teachers skilled to give exceptional instruction with a commitment to afford every child born in our nation, with or without vision, an unobstructed right to life, liberty and the pursuit of happiness".

Dr. Windfield is quick to say that the success of the project being funded was because of a team effort in the College of Education and Human Development. Team members who played a major include: Dr. Melissa Ausbrooks, Dr. Gwendolyn Williams, Dean Daniel Watkins, Dr. Tamika Bradley, and Dr. Dion Porter. Other contributors were the Division of Research and Federal Relations (to include Grants and Contracts), and the Graduate School. All persons involved embraced this initiative with a commitment to the project's mantra—"Its ALL about the children with visual impairments".

JSU Received \$6 Million NSF Grant for Bio-Resource Study of Sustainable Food, Energy and Water

The National Science Foundation awarded Jackson State University a five-year \$6 million grant to study bio-resource materials for sustainable food, energy and water resource development. JSU's Department of Chemistry and Biochemistry is collaborating with the University of Delaware, the University of Mississippi, and the University of Wyoming in this research. The official name of the project is "EPSCoR Track II: Collaborative Research and Education on Synergized Transformational Solar Chemical Looping and Photo-Ultrasonic Renewable Biomass Refinery." This project is expected to significantly advance the understanding of thermodynamics, kinetics, and transport phenomena in chemical looping-based energy production system.

The three main tasks of this project are (1) the development of a transformational solar catalytic chemical looping biomass refinery technology for production of fuel and biochar from biomass; (2) enhancement of biochar quality and functionalization of biochar; and (3) applications of P&UCEB and functionalized P&UCEB in Coz-capture/clean-energy production, water treatment and food production.

Principal investigator Dr. Jerzy Leszczynski said this is a great opportunity for the

JSU team.

"The obtained grant signifies the role of JSU as a leading HBCU institution in the STEM (science, technology, engineering and mathematics) area. The JSU team will lead research performed by three research universities. In addition to addressing the fundamental questions supported by the National Science Foundation, the proposed research also focuses on practical aspects related to the design and manufacturing of bio-resource materials that could be applied in many areas crucial to economic development. The proposed research and collaboration with three universities from various states will also provide an opportunity for JSU students to be involved in state-of-the-art projects and research exchange," said Leszczynski, a professor of chemistry.

Not only will this project advance research, it will also develop STEM fields and workforce education. This project will focus on developing three levels of the program: (1) recruitment and development of junior faculty members and postdoctoral fellows in the energy, food, and water research fields; (2) recruitment and training of undergraduate and graduate students; and (3) public education for the general population and school systems.

JSU SUCCESS: STEM Project Received Funding

A Jackson State University project targeting at-risk and underrepresented students in STEM skills receives nearly \$300,000 from the National Science Foundation to support its work. According to JSU alumnus, Dr. Tim Turner, professor and chair of the Biology Department, "This funding will assist in our ongoing efforts to ensure that our students are fully prepared for flourishing careers in STEM fields. Their success is critical to America's ability to compete on the world stage in the sciences."

The grant, announced by U.S. Rep. Bennie Thompson, was awarded to fund JSU's Students Understanding Chemistry Concepts to Enhance STEM Skills project, known by an acronym that reflects its purpose - SUCCESS.

Turner explains that the project is designed to focus on biology majors and will enable them to successfully complete general and organic chemistry. The SUCCESS project will provide three-day Chemistry Readiness Workshops prior to the start of a course, and an additional two-hour SUCCESS session during each week of the semester. Ultimately, the goal is to diversify the STEM workforce.

College of Science, Engineering and Technology Dean Richard Alo, said, "We are always mindful of our role in preparing the next generation of STEM leaders. Jackson State has a well-deserved reputation for producing students at the bachelor's, master's and doctoral level who are fully capable of adding value as they join the ranks of corporate and government tech and research teams. This grant helps us continue to build a quality workforce by developing a quality product." How these interventions promote student success will be documented, and the knowledge gained will complement successful approaches to undergraduate instruction across multiple stem disciplines. Data from the intervention groups will be compared to historical data and evaluated to determine whether these strategies: (a) improve attendance in chemistry classes, (b) decrease drop/fail/withdraw rates, (c) improve students' conceptual understanding of chemistry, and (d) improve student retention. Results will be disseminated in biology and chemistry education conferences and associated proceedings.

Dr. Timothy Turner serves as the principal investigator for the SUCCESS project. The co-principal investigators include: Dr. Barbara Howard, assistant professor in the Department of Professional Interdisciplinary Studies, School of Lifelong Learning, College of Education and Human Development; Dr. Ashton Hamme, professor and interim chair of the Department of Chemistry; Dr. Naomi Campbell, associate professor, Department of Chemistry; and Dr. Barbara Graham, associate professor and assistant chair of the Department of Biology. The evaluator will be Dr. ConSandra McNeil, professor of sociology and assistant chair of the Department of Criminal Justice and Sociology at JSU.

Overall, this project will contribute to what is known about promoting student success in STEM with at-risk and under-represented students.

School of Public Health Received \$50,000 from the Women's Foundation of Mississippi

Jackson State University's School of Public Health received a \$50,000 grant for their "Determinants of Pregnancy Prevention among Older African American Teens at HBCUs" program from the Women's Foundation of Mississippi (WFM).

"We know that when women thrive, so does our state," said Tracy DeVries, WFM executive director."That's why we award grants to programs that drive social change and have a lasting impact on women and their families."

The grant will be used to conduct research to understand the causes of higher rates of teen pregnancy among older teens, while providing access to high-quality sex education and youth-friendly healthcare services. Findings will be used to influence the direction of future projects, legislation and to increase access to healthcare and social services.

Dr. Mohammad Shahbazi, interim dean for the JSU School of Public Health, said, "We are very thankful that the Women's Foundation of Mississippi chose to invest in this important research. Our goal as Mississippi's first School of Public Health is to improve the health of populations in the state of Mississippi through evidencebased and community-oriented teaching, research and service. This grant will help us fulfill our mission."

The School of Public Health at JSU was authorized in 2015 and initially supported by a \$2 million Executive Budget Recommendation by Governor Phil Bryant, who

said, "Health care in Mississippi is an industry of necessity. Not only can our state benefit from more health care providers and professionals, our economy can benefit from growth in the health care sector. This program will be a very important part of the health care landscape in Mississippi."

"We are thrilled to have this opportunity to delve deeper into issues surrounding teen pregnancy among older teens during a time when they are typically away from home and lacking family support. This award from Women's Foundation affords us the opportunity to assess determinants of pregnancy prevention among older teens on college campuses, providing insight into a very challenging public health issue," said Dr. Joni K. Roberts, principal investigator for the project.

"Our grant making focus aligns with our belief that all women should have the opportunity to obtain degrees or credentials, good jobs with benefits, and to plan their pregnancies," noted Latisha Latiker, director of Grant Programming at WFM.

Economic security for women is the mission of the Women's Foundation of Mississippi. Committed to helping Mississippi's women and girls transcend the state's dire social and economic barriers, the WFM cultivates social via grant making, advocacy and action in the areas of planned pregnancy, education and careers.

PPAD Received \$171,600 Grant to Investigate USDA's Socially Disadvantaged Farmers and Ranchers Policy in Five States

Jackson State University's (JSU) Department of Public Policy and Administration (PPAD) received a \$171,600 grant to determine the level of effectiveness of the United States Department of Agriculture's (USDA) Act (Section 2501; 2014) to remedy historical barriers to the success of socially disadvantaged farmers and ranchers in Alabama, Mississippi, Louisiana, North Carolina, and Virginia. Dr. Johnny B. Gilleylen Sr serves as the project's principal investigator with Drs Gloria Billingsley, Jae-Young Ko, Ester Stokes, and TalyaThomas serving as co-principal investigators (Co-PIs). Each of the Co-PIs will lead the investigation of their assigned state.

The USDA grant was awarded through the Socially Disadvantaged Farmers and Ranchers (SDFR) Policy Research Center at Alcorn State Univesity to conduct a comprehensive study and report on the challenges and issues that specifically impact minority and female farmers and ranchers. The award was initially focused on Mississippi but was expanded by the Policy Reseach Center to include four additional states. The program evaluation seeks to determine the impact, if any, that the USDA 2501 policy and programs might have had on minority and female framers and ranchers in the five selected states since its implementation.

According to Dr. Gilleylen, "the project serves as an opportunity for us to substantively contribute to the discussion of policy impacting two of our key mission-identified constituencies--minorities and women." It is also a great opportunity for the units of the College of Public Service (CPS) to collaborate.

Dr. Ricardo Brown, Dean of the CPS states "This is a wonderful opportunity to have JSU faculty lend their collective expertise to assess, evaluate, and propose solutions to the USDA that will reduce and/or eliminate barriers limiting the success of minority and women farmers."

CREST Center for Nanotoxicity Awarded \$5 million from NSF to Study how Nanoparticles Impact the Environment

Jackson State University has been awarded a \$5 million grant over five years from the National Science Foundation to allow the "CREST Center for Interdisciplinary Nanotoxicity" to study multifunctional nanoparticles, including their toxicity on the environment.

Because nanoparticles have potential applications in a wide range of areas – biomedical, optical and electronic fields – the CREST Center also will examine model counterparts of multifunctional nanoparticles. This will allow the center to transform research and educational programs at JSU and then transfer that new knowledge to scientific societies and to the general public.

The effects of the project include 1) the introduction of the Universal Design for Research Training model in the center's activities; 2) the development of a STEM (science, technology, engineering, mathematics) pipeline that includes high school students from the Jackson area; and 3) training of underrepresented minority students in multicultural and international research environment.

In addition, the project is expected to increase the number of Ph.D. degrees awarded to African-Americans and women and assist in providing a competent and diverse workforce for universities, industry and federal laboratories. Ultimately, researchers will generate tools for society to efficiently and effectively evaluate risks associated with nanomaterials to ensure environmental and human safety.

JSU's principal investigator, Dr. Jerzy Leszczynski, said, "This is the fourth time in the past 15 years that JSU has been awarded a five-year \$5 million CREST Center grant from the National Science Foundation. These grants facilitate infrastructure improvement, research advancement and establishment and execution of a successful Ph.D. program in the Department of Chemistry and Biochemistry."

Leszczynski, a professor of chemistry, said, "Furthermore, the current grant supports the interdisciplinary team working on understanding the leading factors of the toxicity of nanomaterials and helping design new species that would not be harmful for the environment or humans. Faculty members and students involved in this project have an opportunity to solve problems of vital importance for the state and national economy."

Running for 16 years, the CREST Center has produced 20 Ph.D. graduates, 292 publications, 72 student publications, 479 presentations, 181 student presentations, and an overall grant funding of more than \$22.5 million.



A NON-PROVISIONAL PATENT APPLICATION WAS FILED FOR THE FOOT THERMOMETER DEVICE. THIS IS THE FIRST APPLICATION FILED WITH STUDENT INVENTORS. THE STUDENT INVENTORS OF THE FOOT THERMOMETER DEVICE WERE FEATURED IN EBONY MAGAZINE, WHICH ALSO HIGHLIGHTED TECH TRANSFER AT JACKSON STATE UNIVERSITY. THE STUDENTS ALSO SHOWCASED THE "SMART MAT" AT THE 17TH ANNUAL CONFERENCE ON TECHNOLOGY INNOVATION.

JSU CURRENTLY HAS FIVE PENDING PATENTS WITH THE UNITED STATES PATENT AND TRADEMARK OFFICE.

IN ITS FOURTH YEAR, JSU INNOVATION MONTH INCLUDED ALL COLLEGES, SCHOOLS, AND MAJOR AREAS IN ITS SCHEDULE. FROM DRONE TECHNOLOGY TO STUDENT INVENTIONS, INNOVATION MONTH SERVED AS A MAJOR PLATFORM SHOWCASING INNOVATION AT JACKSON STATE UNIVERSITY.

THE NATIONAL SCIENCE FOUNDATION INNOVATION CORPS SITE RECRUITED ITS FIRST COHORT OF PARTICIPANTS AND INTRODUCED THEM TO THE OVERALL GOALS AND OBJECTIVES OF THE NSF I-CORPS PROGRAM. THE TECH TRANSFER DIRECTOR LED THE SUMMER 2017 COHORT OF FIVE TEAMS OF FACULTY, STUDENTS AND MENTORS THROUGH THE LEAN START UP METHODOLOGY.

DR. KAMAL ALI, PROFESSOR OF ELECTRICAL AND COMPUTER ENGINEERING, WAS SELECTED AS A FELLOW OF THE NATIONAL ACADEMY OF INVENTORS. THE 2016 FELLOWS WILL BE INDUCTED ON APRIL 6, 2017, AS PART OF THE SIXTH ANNUAL CONFERENCE OF THE NATIONAL ACADEMY OF INVENTORS AT THE JOHN F. KENNEDY PRESIDENTIAL LIBRARY & MUSEUM IN BOSTON, MA. THE TECH TRANSFER UNIT AT JACKSON STATE UNIVERSITY NOMINATED DR. ALI FOR THIS HONOR. HE IS THE 2ND FACULTY FROM JSU TO RECEIVE THIS RECOGNITION, Dr. Kamal Ali, Professor of Industrial Systems & Technology/Electrical & Computer Engineering, is among the new class of Fellows of the National Academy of Inventors (NAI). The induction ceremony was held in Boston on April 6, 2017 at the John F. Kennedy Presidential Library and Museum.

"We are justly proud of Kamal, his leadership, his inspiration to our students and all of us as an inventor and this wonderful honor," said Dr. Richard A. Aló, dean of the College of Science, Engineering and Technology.

Ali, a professor of Industrial Systems & Technology/Electrical & Computer Engineering, has made important contributions to the invention of Hardware in the Loop Simulator for autopilots. His current research focuses on the educational STEM pipeline.

He holds one U.S. patent and has one other patent pending.

According to the NAI website, "Election to NAI Fellow status is the highest professional distinction accorded solely to academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society."

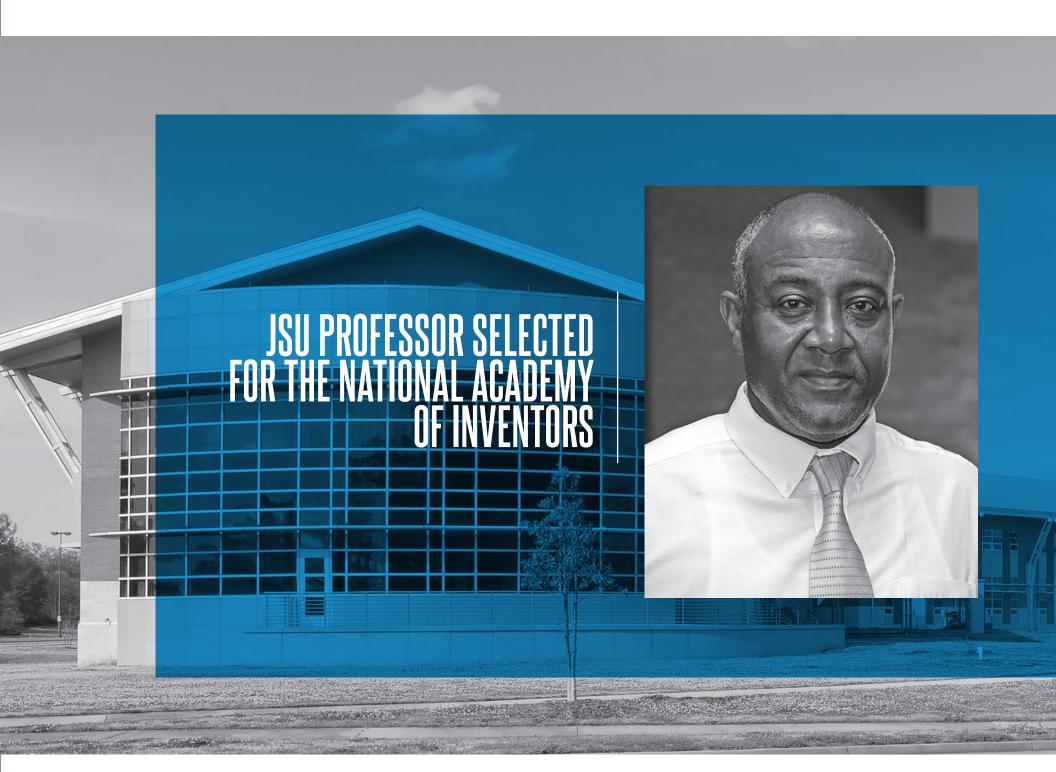
There are currently 757 Fellows representing the NAI Fellows Program worldwide

from more than 229 universities, and governmental and non-profit research institutions combined.

Ali was one of more than 90 inductees and among 400 constituents who convened in Boston for the three-day NAI conference that featured keynote speeches by Andrew H. Hirshfeld, U.S. Commissioner for Patents, Lisa Seacat DeLuca, an inventor at IBM, and H. Robert Horvitz, Nobel Laureate and professor at Massachusetts Institute of Technology. Dr. Ali's nomination was encouraged and facility by the Technology Transfer, Licensing and Commercialization Unit at JSU.

He has over 70 publications covering a wide range of subjects, including solid state physics, psychology, neural networks, artificial intelligence, unmanned aerial and ground systems, embedded systems and electronics. Additionally, Ali is the recipient of several awards and fellowships and has served as a reviewer and panelist for a number of scientific journals and organizations such as the National Science Foundation (NSF) and the American Society for Electrical Engineers (ASEE).

Collectively, the Fellows hold more than 26,000 issued U.S. patents, which have generated more than 8,500 licensed technologies and companies and created more than 1.1 million jobs. In addition, over \$100 billion in revenue has been generated based on NAI Fellow discoveries.





SCHOLARLY ENGAGEMENT HIGHLIGHTS

SEVENTEEN FACULTY MEMBERS COMPLETED THE GRANT WRITING AS PART OF THE ACADEMY FOR RESEARCH AND SCHOLARLY ENGAGEMENT (6 WORKSHOPS, 3 WEBINARS, AND INDIVIDUAL MEETINGS WITH MENTORS) AND SUBMITTED PROPOSALS TO FUNDING AGENCIES. CURRENTLY, FACULTY IN THE FIRST FIVE COHORTS HAS BEEN AWARDED OVER \$5.4 MILLION IN COMPETITIVE GRANT FUNDING.

THROUGH THE CENTER FOR UNIVERSITY SCHOLARS, TRAVEL SUPPORT WAS PROVIDED FOR 118 FACULTY MEMBERS TO PRESENT RESEARCH AT PROFESSIONAL ACADEMIC CONFERENCES.

THIRTY-TWO FACULTY MEMBERS WERE AWARDED GRADUATE RESEARCH ASSISTANTS.

PROVIDED FACULTY WITH 11 FACULTY DEVELOPMENT WORKSHOPS, 1 NEW FACULTY ORIENTATION, 2 ADJUNCT FACULTY ORIENTATIONS, AND A PROMOTION AND TENURE WORKSHOP.

TWO NEW PROGRAMS WERE ADDED - SCHOLARSWRITE WRITING CIRCLES TO SUPPORT FACULTY IN THEIR ARTICLE AND GRANT WRITING (7 MEETINGS AND WEEKLY SUMMER VIRTUAL MEETINGS) AND TEACHING TUESDAYS (5 LECTURES AT VARIOUS LOCATIONS ON CAMPUS) TO SHARE AND CELEBRATE BEST PRACTICES IMPLEMENTED BY JSU TEACHING EXCELLENCE AWARD WINNERS.

THE FALL 2016 RESEARCHER: INTERDISCIPLINARY RESEARCH JOURNAL WAS PUBLISHED RECENTLY, WITH A NEW ISSUE CURRENTLY IN PRODUCTION.

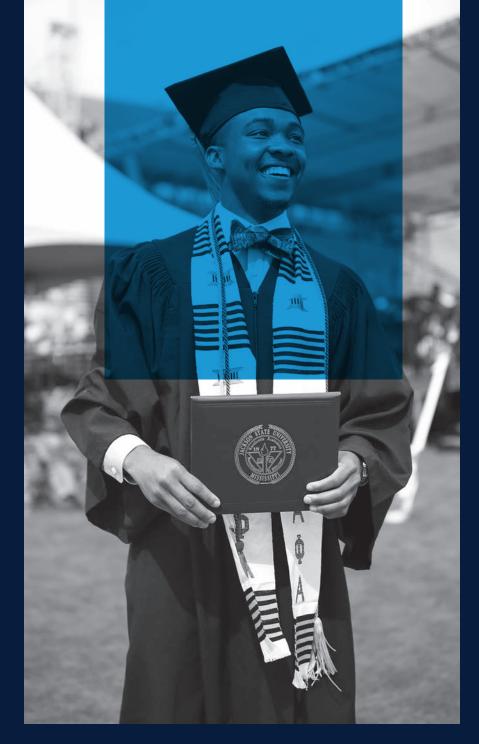


THE CENTER FOR UNIVERSITY SCHOLARS FACILITATED SEVEN (7) FACULTY ENGAGEMENT AND ADVANCEMENT PROGRAMS (FEAP).



The fifth cohort of Jackson State University's Academy for Research & Scholarly Engagement recently completed the 2016-2017 session. The year-long program is designed to broaden the community of Jackson State faculty and staff who earn external funding for their scholarly agendas. Planned workshops, coaching and engagement with program officers at funding agencies helped Academy participants in the development of competitive proposals for external research.

Established in 2012, the Academy has engaged 107 JSU faculty and staff members. Subsequently, they have been awarded approximately \$5.4 million in external funding.



FEDERAL RELATIONS

JSU HOSTED REPRESENTATIVES FROM FEDERAL AGENCIES OR CONGRESSIONAL OFFICES ON SEVEN OCCASIONS THIS ACADEMIC YEAR. STAFF FROM THE DIVISION OF RESEARCH AND FEDERAL RELATIONS TRAVELLED TO WASHINGTON, D.C. FOR THREE CONGRESSIONAL VISITS AND TO ATTEND EVENTS OR MEET WITH PROGRAM OFFICERS ON THREE ADDITIONAL OCCASIONS.

THE DIVISION OF RESEARCH AND FEDERAL RELATIONS FACILITATED THE SPONSORSHIP OF FIVE STUDENTS IN COMPUTER SCIENCE AND COMPUTER ENGINEERING AS STUDENT RESEARCHERS WITH THE DEPARTMENT OF ENERGY'S BUILDING TECHNOLOGIES OFFICE IN THE OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY FOR SUMMER 2017. THE SUPPORT INCLUDED TUITION, STIPEND, AND SUPPORT FOR A FACULTY MEMBER FOR ONE MONTH, AND TRAVEL EXPENSES.

IN OCTOBER 2016, THE WHITE HOUSE INITIATIVE ON RESILIENT DESIGN RECOGNIZED JACKSON STATE UNIVERSITY AS PART OF A COALITION OF 97 COLLEGES, UNIVERSITIES, ASSOCIATIONS, AND ACADEMIC CENTERS AROUND THE COUNTRY THAT ARE COMMITTING TO ENSURE THAT THE NEXT GENERATION OF DESIGN PROFESSIONALS ARE PREPARED TO DESIGN AND BUILD FOR EXTREME WEATHER EVENTS AND THE IMPACTS OF CLIMATE CHANGE.

CHRISTOPHER SMITH, FORMER ASSISTANT SECRETARY FOR FOSSIL ENERGY, VISITED THE CAMPUS OF JSU TO PROMOTE THE MICKEY LELAND ENERGY FELLOWSHIP PROGRAM WITH THE DEPARTMENT OF ENERGY.

THE VICE PRESIDENT FOR RESEARCH AND FEDERAL RELATIONS AND THE ASSOCIATE VICE PRESIDENT FOR RESEARCH AND SCHOLARLY ADVANCEMENT ATTENDED THE WHITE HOUSE'S HBCU WEEK CONFERENCE IN ARLINGTON, VIRGINIA.

JSU RECEIVED HONORABLE MENTION AT THE ASSOCIATION OF PUBLIC AND LAND-GRANT UNIVERSITIES (APLU) 2016 ANNUAL CONFERENCE IN AUSTIN, TEXAS FOR A VIDEO SHOWCASING TECHNOLOGY INNOVATION AT JSU. THE UNIVERSITY ALSO RECEIVED A \$1,000 PRIZE FOR THE VIDEO.

VISIBILITY

When it comes to federal research expenditures, Jackson State University is one of only four Historically Black Colleges and Universities listed by The Center for Measuring University Performances' top 200 research universities in the country. A joint venture between Arizona State University and the University of Massachusetts at Amherst, The Center is designed to track research productivity across the United States.

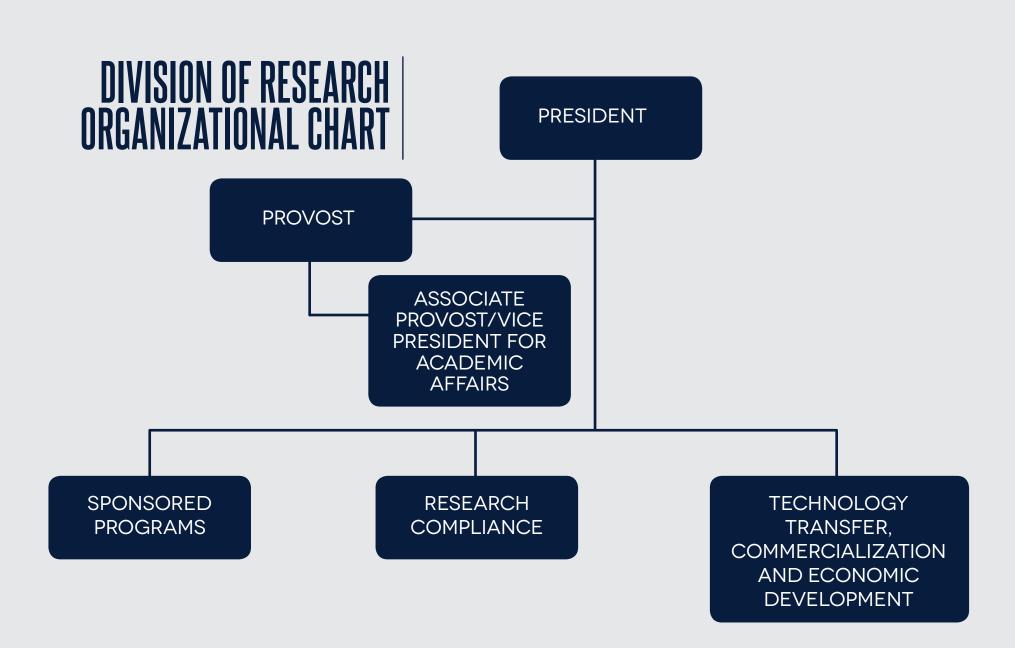
Jackson State University's inclusion as one of the top 200 universities in the country for federal research expenditures shows the high level of productivity that comes from our brilliant faculty and staff. We are honored by this achievement, which is only a glimpse of the success that emanates from our great institution. It is a privilege for Jackson State University to be listed among the premier research universities in the country. This milestone is the direct result of our dedicated and talented faculty and staff engaged in funded research.

Ranked as #195, Jackson State University joins the three other Mississippi research universities and the state's only medical school on the list, with Mississippi State University (#126), the University of Mississippi (#174), the University of Mississippi Medical Center (#185), and the University of Southern Mississippi (#189).

The universities identified in the annual report support research in a wide variety of fields, contributing to both the growth of knowledge in those areas and to the economic impact of universities on their communities. As the Center for Measuring University Performance notes in its report, "Not only do high-quality research institutions require strong financial support, they also require rigorous processes to identify the best faculty and staff, the best students and support their performance within a highly competitive national and international context."



JSU ONE OF ONLY TWO HBCU'S RANKED AMONG TOP 200 THE COUNTRY VIEI IV



ACCOUNTABILITY HIGHLIGHTS

THE UNIT OF GRANTS AND CONTRACTS SUCCESSFULLY MANAGED OVER 300 RESTRICTED FUND ACCOUNTS.

THE UNIT OF GRANTS AND CONTRACTS SUCCESSFULLY REVIEWED AND VERIFIED OF OVER 4,000 ONLINE REQUISITIONS FOR THE FISCAL YEAR.

THE UNIT OF GRANTS AND CONTRACTS PROVIDED STATISTICAL REPORTS AND FINANCIAL ANALYSES TO VARIOUS INSTITUTIONAL AREAS AND DEPARTMENTS. GLOBALIZATION

TRANSPARENCY AND COMPLIANCE

THE RESEARCH COMPLIANCE UNIT REPORTED NO UNRESOLVED INCIDENTS FOR GENERAL COMPLIANCE: HAZMAT, IRB, IACUC AND IBC REVIEWS, SCHOLARLY CONDUCT OF RESEARCH, PROTOCOL REVIEWS, OR SECURITY VIOLATIONS DURING THE REPORTING PERIOD. ALL SEMI-ANNUAL AND ANNUAL REPORTING REQUIREMENTS WERE COMPLETED IN A TIMELY MANNER.

JSU MAINTAINED ITS MISSISSIPPI DEPARTMENT OF HEALTH LICENSE (MS-867-01) FOR LABORATORY RESEARCH, CERTIFYING AN ADDITIONAL USER; AND SUCCESSFULLY RENEWED ITS FEDERAL ALCOHOL PERMIT (TF-MS-186, 10/27/2016) ENSURING NO LOSS IN INVENTORY AND CONTINUANCE OF RESEARCH ACTIVITIES WITH NO INTERRUPTIONS DURING THE PERIOD

JSU SUCCESSFULLY COMPLETED A DEFENSE SECURITY SERVICE AUDIT AND APPROVAL OF ITS DEPARTMENT OF STATE STATEMENT OF REGISTRATION THAT ENSURES THE CONTINUANCE OF SECURITY AND INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR) ACTIVITIES.

ONGOING TRAINING AND UPDATES TO DETER AND ASSIST WITH NON-COMPLIANCE ISSUES WERE PERFORMED IN THE FOLLOWING AREAS: LABORATORY SAFETY, RADIATION SAFETY, INTERNATIONAL/ SECURITY, IRB, IACUC, RCR, AND BIOSAFETY.

RESEARCH COMPLIANCE HAS IMPLEMENTED AUTOMATION IN THE INITIAL REPORTING AREAS OF FCOI, TRAINING, INTERNAL CONTROLS, ETC. A TRACKING MODULE WAS IMPLEMENTED THAT SHOULD ASSIST WITH THE TIMELY FOLLOW-UP AND RENEWALS OF ALL TRAININGS.

JACKSON STATE UNIVERSITY DEVELOPED AND IMPLEMENTED THE VARIOUS COMPONENTS OF THE 5-YEAR NSF COMPLIANCE AGREEMENT.

2017-2018 GOALS

THE DIVISION WILL SERVE AS A LEADER IN PROMOTING EXCELLENCE AMONG ALL THE UNIVERSITY'S SCHOLARS AND BE RECOGNIZED AS AN INSTITUTIONAL MODEL IN DEVELOPING MULTIDISCIPLINARY COLLABORATIONS THROUGHOUT THE CAMPUS, LOCAL, NATIONAL, AND INTERNATIONAL COMMUNITIES.

THE DIVISION WILL PROMOTE INNOVATION, ACADEMIC ENTREPRENEURSHIP, AND SCHOLARLY ENGAGEMENT IN ORDER TO INCREASE RESEARCH AND DEVELOPMENT.

THE DIVISION WILL INCREASE ENGAGEMENT WITH PROGRAM OFFICERS AND FUNDING AGENCIES, BUILD STRATEGIC ALLIANCES AND COLLABORATIONS, DEVELOP A CLOSER RELATIONSHIP WITH RESEARCHERS, AND HIGHLIGHT THE WORK OF STUDENT/FACULTY RESEARCH TEAMS.

THE DIVISION WILL ESTABLISH A TRANSPARENT PIPELINE OF THE ENTIRE PROPOSAL DEVELOPMENT AND PROJECT MANAGEMENT PROCESS, FROM CONCEPT DEVELOPMENT AND PROPOSAL SUBMISSION TO PROJECT IMPLEMENTATION AND RESEARCH SUSTAINABILITY.

THE DIVISION WILL IMPROVE THE RESEARCH INFRASTRUCTURE TO ENSURE EFFICIENT AND EFFECTIVE PRE-AWARD AND POST AWARD ACTIVITIES.

THE DIVISION WILL ENSURE COMPLIANCE WITH UNIVERSITY, STATE, FEDERAL, AND AGENCY REGULATIONS AND IMPROVE ORGANIZATIONAL EFFICIENCY.

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Division of Academic and Student Affairs Marie O'Banner Jackson Samuel Jones

Division of Business and Finance Willie Gray

Division of Information Technology Deborah Dent

Division of Institutional Advancement Gina P Carter-Simmers Bobby Pamplin

Melinda Todd Heather Wilcox

College of Business

Aletha Washington

College of Education and Human Development

Della Archie Milliard Bingham Frank Giles Tamara Herron Gloria Smith Daniel Watkins Glenda Windfield Carlos Wilson

College of Liberal Arts

Lisa Beckley-Roberts Helen Crump Monica Granderson Robert Luckett Shon McCarthy Earnestine McNeil Jimmy Mumford Byron Orey Candis Pizzetta Kaye Sly Shanna Smith Roshell Smith-Spears

College of Public Service

Moe Chowdhury Melvin Davis Johnny Gilleylen

College of Science Engineering and Technology

Kamal Ali Richard Alo Zikri Arslan Maria Begonia Joseph Cameron Oilin Dai Mehri Fadavi Ashton Hamme Fengxiang Han Hill, Glake Tor Kwembe Jerzy Lesczynski Lin Li Yadong Li Natarajan Meghanathan William McHenry Loretta Moore

Paresh Ray Tigran Shahbazyan Huiru Shih Gordon Skelton April Tanner Paul Tchounwou Francis Tuluri Timothy Turner Feng Wang NingNing Wang Robert Whalin Loren White Shan Yang Sudha Yerramilli Yiming Liu Pao-Chiang Yuan

School of Public Health

Donna Antoine-Lavigne Sarah Bauxbuam Lynette Ekunwe Marinelle Payton Brandi Newkirk-Turner Gregory Wilson



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