

Division of Research & Federal Relations



2012-2013 Annual Report

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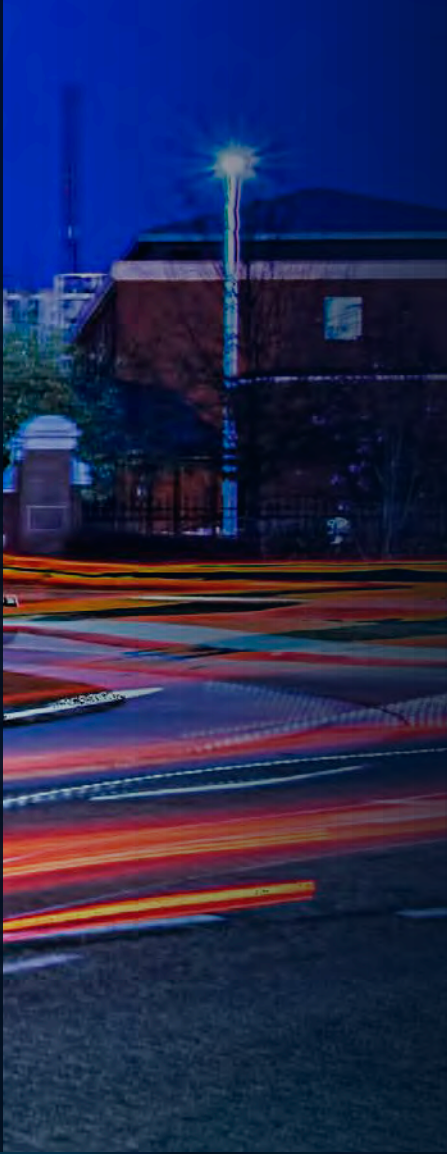
VISION AND MISSION

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, local, national, and international communities.

Mission

The Division has primary responsibility for nurturing excellence and advancing research, 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 effectively 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.





FUNDING SOURCES & DISTRIBUTION

Funding Sources

| FUNDING SOURCES | COUNT | TOTAL |
|---|------------|---------------------|
| U.S. Department of Agriculture | 1 | \$291,746 |
| U.S. Department of Commerce | 2 | \$190,245 |
| U.S. Department of Defense | 13 | \$2,384,406 |
| U.S. Department of Education | 5 | \$7,694,282 |
| U.S. Department of Energy | 4 | \$339,302 |
| U.S. Department of Homeland Security | 1 | \$944,400 |
| U.S. Small Business Administration | 1 | \$142,680 |
| U.S. Department of Transportation | 5 | \$30,500 |
| National Aeronautics & Space Administration | 2 | \$90,000 |
| National Institutes of Health | 22 | \$10,696,181 |
| National Science Foundation | 20 | \$5,857,185 |
| TOTAL FEDERAL | 76 | \$28,660,927 |
| TOTAL STATE AGENCIES | 29 | \$3,045,618 |
| TOTAL FOUNDATIONS/CORPORATIONS | 21 | \$4,157,568 |
| TOTAL NONPROFIT AGENCIES | 8 | \$378,864 |
| GRAND TOTAL | 134 | \$36,242,977 |

Funding Distribution

| COLLEGE/DIVISION | NO. OF AWARDS | TOTAL |
|--|---------------|---------------------|
| Office of the President | 4 | \$7,524,888 |
| Division of Academic Affairs | 3 | \$331,168 |
| Division of Institutional Advancement | 2 | \$443,088 |
| Division of Research and Federal Relations | 22 | \$5,737,191 |
| Division of Student Life | 3 | \$38,400 |
| College of Business | 2 | \$434,426 |
| College of Education and Human Development | 12 | \$3,267,337 |
| College of Liberal Arts | 4 | \$66,404 |
| College of Public Service | 17 | \$1,506,137 |
| College of Science, Engineering and Technology | 64 | \$16,893,938 |
| GRAND TOTAL | 134 | \$36,242,977 |

Leading the South in Addressing Health Disparities

Health disparities, a disproportionate gap in health services, diagnoses, and treatment, continue to widen in the nation, especially in Mississippi. Jackson State University through its Institute of Epidemiology and Health Services Research is committed to and has taken a giant step in addressing racial-ethnic inequities in health and healthcare in the state of Mississippi.

During the past twenty years health disparities has dramatically increased in the United States, escalating to a high prevalence, where Mississippi has continued to rank No. 1 over the last decade. To address and eliminate these health disparities and build viable, healthy communities, the Jackson State University Institute of Epidemiology and Health Services Research (Institute) established a Center of Excellence in Minority Health and Health Disparities (Center) through competitive grant funding from the National Institutes of Health/National Institutes on Minority Health and Health Disparities. It is a comprehensive educational, research and community outreach center, where its team of investigators and staff are dedicated to understanding and eliminating health disparities of racial and ethnic minorities.

The Center serves as a conduit for health disparity research through innovative approaches and trans-multidisciplinary concepts and methods, providing quality research and scientific rigor. Research projects include studies on multidisciplinary translational research, focusing on the top leading chronic diseases including obesity, cardiovascular disease, stroke, cancer, and diabetes. It also provides training and education, including faculty professional development, research mentorship, and student development;

and information sharing and outreach and engagement to the community-at-large.

Through funding from the National Institutes of Health/National Institute on Minority Health and Health Disparities, the Department of Health and Human Services, and Mississippi State Department of Health contracts, the Center provided scholarships to 168 students in a variety of health professions to increase diversity in the health profession workforce in medically underserved communities to ensure culturally effective service and reduce health disparities. The scholarships tackled a major barrier to disadvantaged students' access to education within health professions-- namely, high tuition costs, where education is often interrupted due to the lack of funds. The funds are also being utilized to continue the efforts of the Center through providing innovative approaches and multidisciplinary research concepts and methods to understand and eliminate the pervasive inequalities affecting the health and health care of racial and ethnic minorities and other historically underserved populations. This effort also supports community outreach and engagement, including annual conferences, symposia, workshops, and health screenings.

Dr. Paresh Ray: On the forefront of efforts to develop cancer treatments

Dr. Paresh Ray and his team of researchers in Jackson State University's Center for Nanoscience and Nanotechnology are developing a method to kill cancer cells without harming healthy cells. Their research paves the way to establish cancer treatments without the harsh side effects of chemotherapy and radiation. It could also lead to less expensive treatment for patients. Ray's photothermal therapy system has been effective in the lab, killing prostate, breast, skin, and liver cancer cells.

The photothermal therapy system using popcorn-shaped nanoparticles can detect cancer, kill it and monitor the cells to determine if treatment is effective. His team also has been the first to use gold nanoparticles to target and kill multi-drug-resistant salmonella bacteria DT 104. A patent for the photothermal therapy system is pending.

In March 2012, Ray presented his research during the 243rd National Meeting & Exposition of the American Chemical Society (ACS), the world's largest scientific society.

Ray is an internationally-known chemist and JSU is proud to have him among the university's esteemed faculty. Ray has 132 research papers that have been cited a minimum of 40 times. His "Selective detection of mercury (II) ion using nonlinear optical properties of gold nanoparticles," published in the Journal of the American Chemical Society, has 175 citations.





RESEARCH AND SPONSORED PROGRAMS HIGHLIGHTS

NIH

The National Institutes of Health (NIH) has sponsored a number of research activities at Jackson State University including:

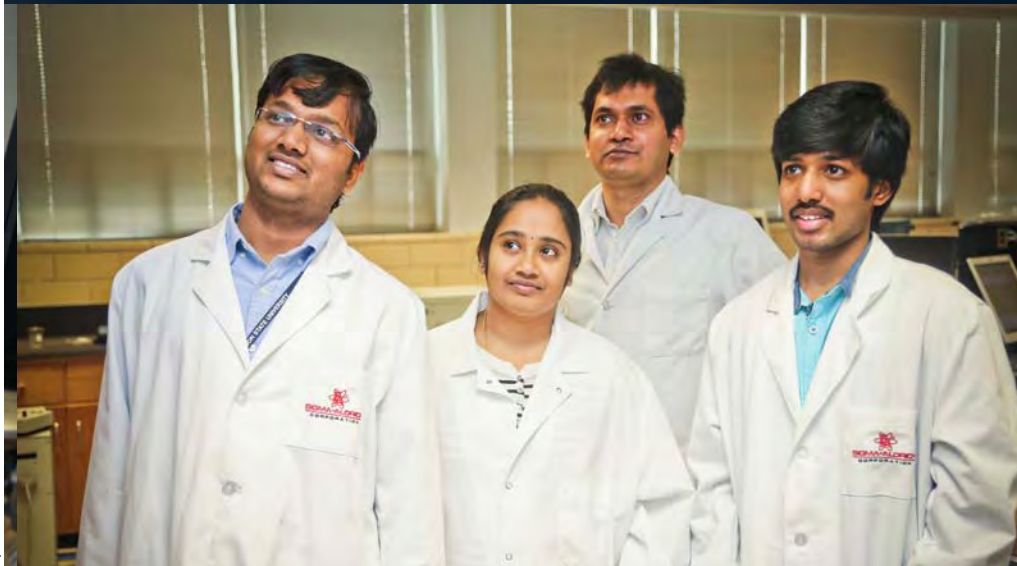
- ▶ **Jackson Heart Study Coordinating Center (\$3,025,288)** – this Center is a multi-center investigation of predictors of cardiovascular disease (CVD) in over 5,000 African Americans living in Hinds, Madison and Rankin counties surrounding the Jackson, MS metropolitan area.
- ▶ **Eliminating Health Disparities Through Multi-Trans-Disciplinary Approaches (\$1,008,149)** – this project uses trans-multidisciplinary concepts and methods to provide quality research and scientific rigor in the elimination of obesity, cardiovascular disease, stroke, cancer, and diabetes.
- ▶ **RTRN Data Coordinating Center (\$1,700,320)** – the Center provides the technology infrastructure and data management resources to facilitate inter-institutional collaborations, including community engagement, information and data sharing, and dissemination across the diverse RCMI communities to improve health outcomes, especially for underserved populations.
- ▶ **Research Initiative for Scientific Enhancement Option II at JSU (RISE) (\$518,228)** – the goal of RISE is to further prepare minority students in the departments of biology, chemistry and biochemistry to enter into biomedical research careers.



NSF

The National Science Foundation (NSF) has sponsored a number of research activities at Jackson State University including:

- ▶ **Interdisciplinary Center for Nanotoxicity (ICN) (\$1,100,000)** – the goal of the ICN is to build a diverse community of researchers, educators, and students who are engaged in research to develop new approaches to enhance knowledge related to nanomaterials, their practical applications and environmental effects, and to implement an education and research program in nanotoxicity.
- ▶ **Bridge to the Doctorate Program (BD) (\$987,000)** – the goal of this LSMAMP BD program is to establish a secure pathway for underrepresented minority students to obtain doctoral degrees in STEM disciplines.
- ▶ **Partnership for Research and Education in Materials Science (PREM) (\$600,000)** – The goal of PREM is to foster collaborative, interdisciplinary research and education in the areas of Multifunctional Nanostructured materials and Mechanically-Active Hybrid Biomolecular Gels that will address the future needs of society and will increase the participation of minorities in material science research and education.
- ▶ **Transforming the Climate and Advancing STEM Women at an HBCU in the South (ADVANCE) (\$546,398)** – this is a five-year program designed to enhance the overall work climate for women faculty in STEM and SBS, while informing the larger academic community about issues that are relevant to women at HBCUs.



RESEARCH AND SPONSORED PROGRAMS HIGHLIGHTS (cont.)

DoD

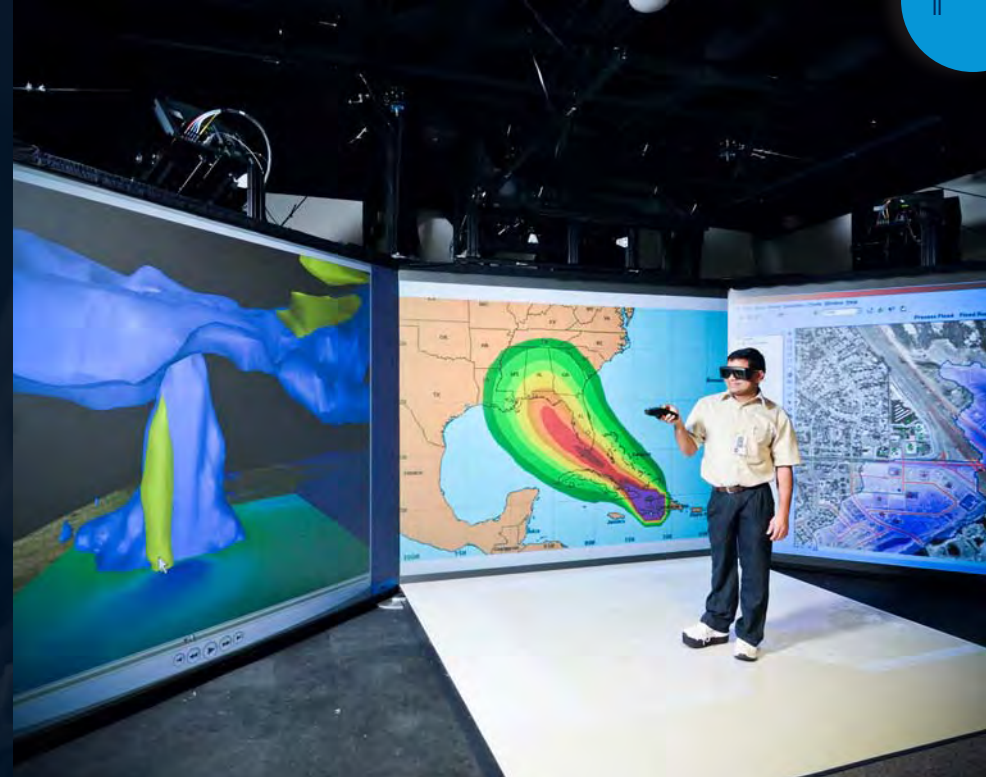
The United States Department of Defense (DoD) has sponsored a number of research activities at Jackson State University including:

- ▶ **Exploring High Performance Heterogeneous Computing via Hardware/Software Co-Design (\$617,036)** – the goal of this project is to perform research that contributes to the advancement of High Performance Heterogeneous Computing, to encourage greater participation in DoD computer engineering programs, and to increase the number of African-American students in computer engineering.
- ▶ **High Performance Computing Technologies for Modeling the Dynamics and Dispersion of Ice Chunks in the Arctic Ocean (\$493,455)** – this project proposes to develop a robust and accurate sea ice dynamics model to address the sea ice interaction at Arctic Marginal Ice Zone.
- ▶ **Efficient Multi-Scale Computation with Improved Momentum Flux Coupling via Operator-Splitting and Probabilistic Uncertainty Quantification (\$398,874)** – one of the objectives of this research project is to develop and apply a fast and efficient computational framework to enhance Army capabilities to assess risk and uncertainties while operating in extreme surficial and environmental conditions.
- ▶ **Probing Materials for Efficient Hydrogen Storage and Search for Materials Characterized by High Tensile Strength (\$299,998)** – the main objectives of this project are to design materials for efficient hydrogen storage and materials of high tensile strengths using state of the art quantum chemical methods.



Other major sponsored activities include:

- **Helping Single African-American Mothers Galvanize Equitable Outcomes for Mississippi's Young Males of Color (\$2,600,000)** – sponsored by the Kellogg Foundation, this project focuses on single mothers of young black males in Greenwood, MS, building awareness that parents are their children's first teachers.
- **Math and Science Partnerships (MSP) (\$1,200,000)** – sponsored by the Mississippi Department of Education, MSP's vision is to improve the teaching and learning of mathematics and science throughout the State of Mississippi. It brings the latest results of learning research and state-of-the-art technologies to the classroom.
- **Center of Excellence, Analysis and Response for Coastal Hazards (\$944,400)** – sponsored by the U.S. Department of Homeland Security (DHS), this Center produces educational curricula focused on natural disasters that will serve as a firm and enduring foundation for producing the next generation of highly educated, creative and innovative researchers to help in solving existing and future DHS challenges relating to natural disasters in coastal areas.
- **Substance Abuse Prevention and Treatment Block Grant (SABG) (\$331,690)** – sponsored by the Mississippi Department of Mental Health, this project delivers prevention services to youth, adolescents, adults and communities within the Jackson Metropolitan area as well as delivers prevention services to Jackson State University constituents.



LIST OF RESEARCHERS WITH ACTIVE AND NEW GRANTS AND AWARDS (FY 2012-2013)

Office of the President

Carolyn W. Meyers
Vivian Fuller
William McHenry

Division of Academic Affairs

Dorris R. Gardner
Melissa L. Druckery

Division of Institutional Advancement

Angela M. Gobar
Gina P. Carter-Simmers

Division of International Programs

Shirley J. Harrison

Division of Research and Federal Relations

Clifton Addison
David Bandi
Demarc Hickson
Donna Antoine-Lavigne
Felix A. Okojie
Herman Taylor
Kimberly Jacobs
Loretta A. Moore
Melvin Davis
Nanette Payne
Pamala D. Heard
Rita Presely
Sudha Yerramilli
Velesha P. Williams
Yan Qi

Division of Student Life

Loria Brown Gordon
Ollie L. Harper
Timothy Abrams

College of Business

Lurlene Irvin
Sydney Brown

College of Education and Human Development

Daniel Watkins
Frank L. Giles
Gloria J. Stamps-Smith
Gwendolyn S. Dawkins
Johnnie Mills Jones
Millard Julette Bingham
Nikishia Ware

College of Liberal Arts

Amy Burks-Berry
Daphne Chamberlain
Ernestine McNeal
Kaye F. Sly
Lawrence T. Potter
Rico D. Chapman
Robert E. Lockett
Taunjah Bell

College of Public Service

Anthony R. Mawson
Bennett A. Odunsi
Brandi L. Turner
Donna Antoine-Lavigne
Ester W. Stokes
Gerri Cannon Smith
Gina Scutelnicu
Leon Chestang
Marinelle Payton
Mohammad Shahbazi
Olugbemiga T. Ekundayo
Sophia S. Leggett

College of Science, Engineering and Technology

Abdelnasser Eldek
Abdul K. Mohamed
Alamgir Hossain
Anjaneyulu Yerramilli
April L. Tanner
Ashton T. Hamme
Danuta Leszczyńska
Edna L. Holbrook
Ezat Heydari
Farshad Amini
Feng Wang
Francis Tuluri
Glake A. Hill
Gordon Skelton
Hafiz A. Ahmad
Hari H. P. Cohly
Himangshu S. Das
Hongtao Yu
Huey-Min Hwang
Huiru Shih
Hyun-ju Kim

College of Science, Engineering and Technology (cont.)

Jacqueline J. Stevens
Jacqueline Jackson
James Perkins
Jerzy R. Leszczynski
Joseph A. Cameron
Kamal S. Ali
Khalid H. Abed
Lin Li
Loren D. White
Maria Fatima Begonia
Mehri Fadavi
Ming-Ju Huang
Naomi F. Campbell
Natarajan Meghanathan
Pao-Chiang Yuan
Paresh Chandra Ray
Paul B. Tchounwou
Quinton L. Williams
Raphael Isokpehi
Remata S. Reddy
Richard A. Alo
Robert W. Whalin
Serguei Goupalov
Shahrouz Aliabadi
Shaneka S. Simmons
Shuangzhang Tu
Thomas W. Richardson
Tigran Shahbazyan
Tor A. Kwembe
Wei Zheng
Wilbur W. Walters
William A. Brown
Yadong Li
Yiming Liu



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ACADEMY FOR RESEARCH AND SCHOLARLY ENGAGEMENT

- ▶ Inaugurated in the 2012-2013 academic year, the Academy for Research and Scholarly Engagement helps faculty leverage their scholarly expertise and skills into external funding for their research agendas. At its core is a series of year-long dynamic workshops that guide faculty through the steps of the grant proposal development process. Those workshops are supplemented by engagement with program officers, including travel to funding agencies and foundations as well as coaching by senior JSU faculty with established records of grantsmanship.
- ▶ Though its focus is on the development of successful grant proposals, the Academy also includes activities that assist faculty in conceptualizing compelling research ideas, designing and implementing research agendas and developing inter-institutional partnerships.
- ▶ Thirty-eight scholars completed the program. (To date: 3 proposals were funded; 4 submitted proposals are pending; and 22 proposals/letters of intent were submitted).
- ▶ Many scholars used their experiences in the Academy to enhance their research productivity. Based on their Academy grant proposals, one secured a book contract, some published in peer-reviewed journals and several made conference presentations. The scholarly potential and innovative research of many Academy Scholars were recognized by their receipt of internal grants.

JSU Earns Delta Sigma Theta 2013 Endowed Chair Award

Jackson State University was named the recipient of the 2013 Distinguished Professor Endowed Chair Award at the July 12, 2013 public meeting of the Delta Sigma Theta Sorority 51st National Conference and Centennial Celebration in Washington, D.C. The \$220,000 award will support the university's effort in the School of Social Work for research on the role African-American grandfathers play in child rearing.

Social work professor Dr. Olga Osby submitted the winning proposal, which is titled *American Grandfathers in Community Engagement and Family Stabilization*. "The project stems from my interest in looking at African-American grandfathers as a hidden resource in the community," Osby said. "I see all of these men in our communities and in our churches, but as a social worker and a researcher, I didn't see that reflected in the literature."

Dr. Deborah Dent, interim vice president of Information Technology, accepted the award on JSU's behalf in front of thousands gathered on the National Mall.

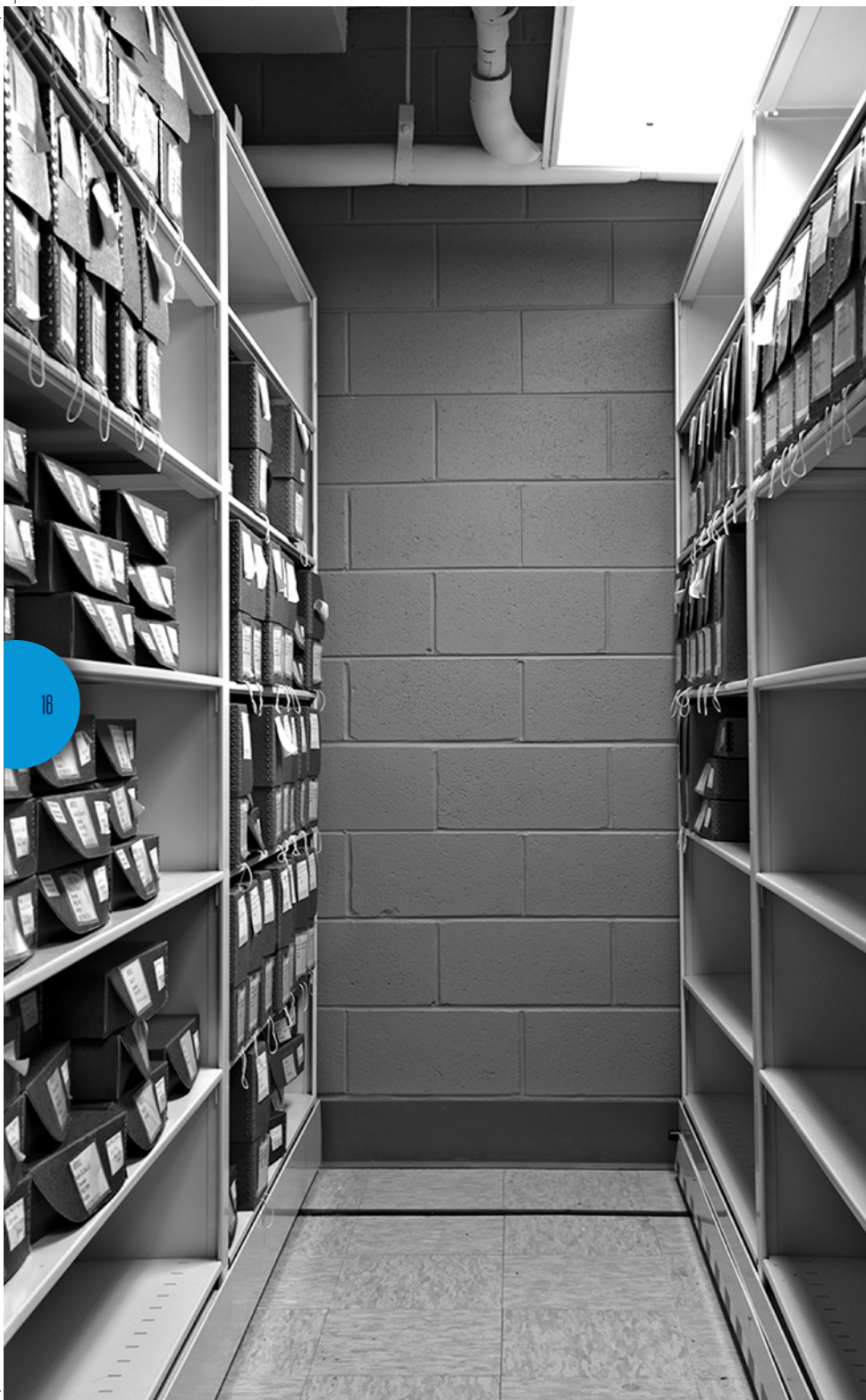
"It was an exciting moment. I was very proud because we were competing against all of the other Historically Black Colleges and Universities nationwide," said Dent, a Delta Sigma Theta member. "The committee is so interested in Dr. Osby's research and they want to follow her project. The thrilling part was that this was the Delta's 100-year celebration. Standing there on the National Mall in front of all of those people, it was just unforgettable."

Delta Sigma Theta holds a competition every four years among all of the nation's HBCUs for the endowed chair award. Dent said there was a great deal of excitement when JSU's award was announced, especially from the Mississippians in the crowd.

Osby first started working on her winning proposal last summer during a writing retreat for JSU's female faculty members. The retreat was part of the JSUAdvance program, which is a leadership development program for women faculty funded by the National Science Foundation. Osby took part in the retreat with support from JSU's Center for University Scholars. She further developed her project through her participation in JSU's Academy of Research and Scholarly Engagement, which launched in the fall of 2012. Through that program, researchers get support and coaching to develop their ideas into funded research projects. Osby's project is the first academy project to earn a grant award.

JSU's Division of Institutional Advancement worked with Osby to identify Delta Sigma Theta as a possible funder for her proposal.





Margaret Walker National Research Center

The Margaret Walker Center at Jackson State University is a repository of literary treasures. The center, functioning as an archive and museum, is named for Margaret Walker Alexander, the celebrated poet and writer. Not only a scholar, she was a friend of artists like Elizabeth Catlett, Richard Wright and Ralph Ellison and a mentor to writers like Sonia Sanchez, Gwendolyn Brooks, Amiri Baraka and Nikki Giovanni.

In 1968, Walker founded the Institute for the Study of the History, Life and Culture of Black People when she was a JSU English and literature professor. The institute was one of the first in the nation to focus on the African-American experience.

Now named in her honor, the Margaret Walker Center is home to her personal papers and has created a digital repository for the nation's second-largest collection of a modern African-American, female writer. The Margaret Walker Personal Papers Digital Archives represents some 35,000 objects, including correspondence, creative works, and nearly 13,000 pages of Walker's hand-written journals that she kept from the 1930s to the 1990s.

"We're proud of our direct link to Margaret Walker at Jackson State," noted Dr. Robert Luckett, the center's director. "Lifting her and her work into the national consciousness gives us a high bar to strive toward each and every day."

The Margaret Walker Center houses fine art, artifacts, and other significant manuscript records, including those of former U.S. Secretary of Education Roderick Paige, a JSU alumnus. The center's oral history department features nearly 2,000 interviews, offering researchers and scholars from across the globe a first-hand account of Mississippi's culturally rich past.

Open to the public, the center sponsors visits from poets, writers and social activists to give students the opportunity to interact with them. Past guests have included U.S. Poet Laureate Natasha Trethewey and Andrew Young, civil rights veteran, former Atlanta Mayor and U.S. Ambassador to the United Nations.

With 2015 marking what would have been Margaret Walker's 100th birthday, the center is planning a year-long series of events to honor her artistic and academic legacy.

INTELLECTUAL PROPERTY

- ▶ Dr. Ernest Izevbogie was named a National Academy of Inventors charter fellow for his patent and JSU-initiated startup company, EdoBotanics. He was inducted into the charter class along with eight Nobel laureates and other well-known university and industry inventors.
- ▶ JSU received nine intellectual property disclosures during the fiscal year.
- ▶ JSU received inquiries and entered into nondisclosure agreements with two major companies, British Biocell and Jenny-O-Turkey Stores, a subsidiary of Hormel Foods. The companies were interested in the salmonella detection and killing technology developed by Dr. Paresh Ray.





DIVISION OF RESEARCH AND FEDERAL RELATIONS GOALS

1. 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.
2. The Division will promote innovation, academic entrepreneurship, and scholarly engagement, in order to increase research and development.
3. The Division will increase engagement with program officers and funding agencies, build strategic alliances and collaborations, develop a closer relationship with all faculty researchers, and highlight the work of student/faculty research teams.
4. 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.
5. The Division will ensure compliance with University, State, Federal, and Agency Regulations and improve organizational efficiency.



JACKSON STATE UNIVERSITY EXECUTIVE CABINET

Dr. Carolyn W. Meyers – *President*

Dr. James C. Renick – *Provost and Vice President for Academic and Student Affairs*

Dr. Deborah F. Dent – *Vice President for Information Technology*

Dr. Vivian L. Fuller – *Director of Athletics*

David W. Hoard – *Vice President for Institutional Advancement*

Dr. William E. McHenry – *Executive Director for the Mississippi e-Center @JSU*

Dr. Loretta A. Moore – *Interim Vice President for Research and Federal Relations*

Matthew Taylor – *Interim General Counsel*

Michael Thomas – *Vice President for Business and Finance*

JACKSON STATE UNIVERSITY COUNCIL OF DEANS

Dr. Richard Alo – *College of Science, Engineering and Technology*

Dr. Jean-Claude Assad – *Interim, College of Business*

Dr. Ricardo A. Brown – *College of Public Service*

Dr. Melissa L. Druckrey – *Library and Information Resources*

Dr. Dorris R. Robinson - Gardner – *Graduate Studies*

Dr. Evelyn J. Leggette – *Undergraduate Studies*

Dr. Lawrence T. Potter, Jr. – *College of Liberal Arts*

Dr. Daniel Watkins – *College of Education and Human Development*





Division of Research & Federal Relations



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