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UM Launches Flagship Constellations to Tackle ‘Grand Challenges’

Multidisciplinary teams seek significant and innovative solutions

NOVEMBER 21, 2017 BY **CHRISTINA STEJBE**

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Chancellor Jeffrey Vitter explains the UM Flagship Constellation initiative at its debut Nov. 17 at the Gertrude C. Ford Center for the Performing Arts. Photo by Thomas Graning/Ole Miss Communications

OXFORD, Miss. – The **University of Mississippi** unveiled its Flagship Constellations initiative, which includes multidisciplinary teams with the goal of creating solutions in the areas of big data, brain wellness, community wellbeing and disaster resilience, on Friday (Nov. 17).

Each team consists of faculty, staff and students through a collaborative effort to explore and solve complex issues through the diversity of ideas. The constellations also will include subthemes, allowing groups to work on multiple projects at once.

“These four constellations are made up of brilliant individual stars, yes, but it’s together that they can make their legendary impact,” Chancellor Jeffrey Vitter said. “By working together, we can address compelling challenges where no single discipline has all the answers and where only deep insights from multiple points of view will discover solutions.”

Vitter also announced a donation of \$1 million in support of this effort by Tommy and Jim Duff to create the Ernest R. Duff Flagship Constellation Fund, in honor of their father.

“With this gift, they are commemorating their late father’s love for Ole Miss, his alma mater,” he said. “This support will allow us to truly maximize and launch the potential of the Flagship Constellations.”

Big Data Team to Pursue Best Ways to Compile and Secure Data

The team will pursue the development of more creative and useful ways to analyze and visualize data to gain new insights and drive innovative research. Its work will encompass many industries, including medicine and health, engineering, security, business, policy and education.

The use of electronic medical records have already provided health care professionals with more information than ever, but there is more to health than what those records say, said Dr. Richard Summers, Billy S. Guyton Professor and professor of emergency medicine, physiology and biophysics at the UM Medical Center.

“The myriad of social and economic factors that impact patient’s disease states and general well-being are just now coming into focus,” Summers said. “It is possible that your health risks may be more associated with the numbers of your ZIP code than even the measures of your cholesterol.

“So a multidisciplinary approach to understanding and managing diseases in our populations is required in a way that draws on information from many varied sources.”

The **Meek School of Journalism and New Media** hosts Data Day each year to emphasize the importance of learning to apply data in both market research and the spread of information. The group is already engaged in several studies using big data, including the impact of Twitter on the political process.

“This Flagship Constellation provides opportunities for collaboration among content creators, those with deep backgrounds in data science and others with broad technological expertise to make assessments about the information people in our state are consuming and to find ways to ensure that they have what they need to make informed choices,” said Deb Wenger, assistant dean and associate professor of journalism.

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Campus Briefs

Donations Sought for 25th Annual Books and Bears Program

OXFORD, Miss. – The University of Mississippi is asking the community to help spread a little joy this holiday season by donating to the 25th annual Books and Bears program. Donations such as toys, books, dolls, bicycles and other children’s play items are being accepted through Dec. 14. All donations will be collected and sorted

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Mississippi Excellence in Coaching Fellowship Aims to Build Leaders

OXFORD, Miss. – Twenty-five inaugural recipients of the Mississippi Excellence in Coaching Fellowship – a program hosted by the University of Mississippi School of Education in partnership with the Mississippi Association of Coaches and the Mississippi High School Activities Association – are expected to increase their impact on student-athletes and their communities. The coaching fellowship

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Ole Miss In the News

Clarion-Ledger: New Essay Collection Tells the Story of Meredith’s Enrollment

Essays celebrate 60th anniversary of James Meredith’s enrollment at University of Mississippi By Lauren Rhoades Oct. 1 marks the 60th anniversary of James Meredith’s 1962 enrollment at the University of Mississippi as the school’s first African-American student.



Dr. Richard Summers (left) and Dawn Wilkins describe the efforts of the Big Data teams at the debut of the UM Flagship Constellations initiative. Photo by Thomas Graning/Ole Miss Communications

Mark Wilder, dean of the Patterson School of Accountancy, explained how the digital revolution has opened opportunities for individuals and companies that can identify creative new products or services.

"A recent Forbes article predicts the data analytics market to exceed \$200 billion by the year 2020, creating great opportunities for businesses in Mississippi and beyond," Wilder said.

From a student perspective, learning about data can increase job prospects upon graduation, but it doesn't mean everyone needs to major in

computer science.

"It does mean that in most jobs, across a wide range of disciplines, employers are looking for employees who have some technical abilities and experience working with big data," said Dawn Wilkins, professor and chair of computer science.

"A new minor in digital media studies, or DMS, was recently created on the Oxford campus for exactly this purpose. The minor allows for an emphasis in computing, digital communications or digital arts."

Brain Wellness Team Seeks Understanding of Brain Function and Impairment

The academically diverse team will engage in population-based research, clinical care, education and basic research to develop technologies and practices help prevent and promote recovery of brain impairment.

"As neuroscientists, we hope to not only understand the normal functions of the brain, but also what goes wrong in brain disease and after nervous system injury," said Michael Lehman, professor and chair of neurobiology and anatomical sciences at UMMC. "With this knowledge, we hope to ultimately prevent and reverse the human suffering caused by conditions such as stroke, spinal cord injury, addiction and autism."

This year, more than 41,000 Mississippians will suffer strokes, and 12,000 of those people will experience permanent disabilities as a result. The cost to the state for this care exceeds \$1 billion.

"The brain wellness constellation positions the University of Mississippi to be at the forefront of ending this epidemic," said Dr. Chad Washington, UMMC assistant professor of neurosurgery. "In fact, we are doing this already.

"Whether it is discovering new drugs to help prevent or treat strokes, improving recovery through novel methods in rehabilitation or making use of UMMC's Telehealth network, we are improving the lives of Mississippians every day."

The initial focus on the study of addiction will concentrate on the opioid epidemic, but the team hopes to ultimately understand addiction and drug abuse from a broader perspective.

Community Wellbeing Team to Foster Stronger and More Vibrant Communities

Rural communities, especially in Mississippi, face many challenges to their economies, personal and environmental health, food security, housing and infrastructure. Members of this constellation will work in communities to identify factors that are impeding upon quality of life and implement new programs and methods to foster stronger and more vibrant communities.

Major concerns both in the United States and around the world are lifestyle and behavior health issues causing premature births, fetal origins of adult diseases, obesity, heart disease, diabetes and disability.

"These issues don't stand alone," said Kate Centellas, Croft associate professor of anthropology. "They are very often coupled with limited access to appropriate and local care.

"Many of them disproportionately impact the poor and people of color. That means we not only face a health care crisis; we're also facing a crisis of equality and lost potential."

The central goal is to develop innovative methods in addressing these issues. The constellation is already working to implement telemedicine in Bolivia, along with two projects in Mississippi: one to help residents of the Mississippi Delta improve water safety, and another to help premature and low-birth weight children and mothers attempting to breast-feed these children.

"Working with the most vulnerable babies and offering state-of-the-art support to their families, the insights from this work will help to inform new models of care that span across the rural-urban continuum," said Dr. Josh Mann, chair of preventative medicine at UMMC.

Disaster Resilience Team to Develop Technology and Tools to Reduce Impact of Catastrophies

"James Meredith: Breaking the Barrier," a collection of essays edited by UM professor of journalism Kathleen Wickham, honors this historic milestone with

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The impact of disasters can be detrimental to a community or area. For example, Hurricane Katrina caused more than 1,800 deaths and an economic damage exceeding \$200 billion in 2005. In the last decade, disasters cost \$1.4 trillion worldwide and have affected 1.7 billion people.

"In our state, we are at increased risk for experiencing natural disasters," said Stefan Schulenberg, professor of psychology. "We mark time by whether events occurred before Katrina or after, whether they occurred before Camille or after. We know natural disasters very well. They are part of our culture."

The disaster resilience team will combine research from environmental and legal disciplines with material sciences, information technology and public health. Its aim is to develop the technology and tools to reduce the impact of natural, manmade and environmental disasters and to increase the sustainability of affected communities.

"Given our place and capacities, the University of Mississippi can be a test bed for studying disaster management and prevention," said Richard Forgette, associate provost. "We are a diverse and critical mass of experts, research centers and support infrastructure centered on advancing knowledge in disaster resilience."

The team hopes to mitigate all types of disasters by understanding and addressing vulnerabilities.

Provost Noel Wilkin said he is excited about the energy Ole Miss faculty and staff have brought to the Flagship Constellations initiative.

"This collaborative initiative has the ability to advance our standing as an academic institution, to magnify the influence of our research on solving major challenges faced by society and to contribute knowledge that will change the lives of people," Wilkin said.

"I also hope that it will rekindle your confidence that our faculty and researchers have incredible potential to change the lives of others through their research. I look forward to the meaningful work that will be done and this difference we're going to make in society."

For more information about these collaborations, visit <http://FlagshipConstellations.olemiss.edu>.



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