



## Undergraduate Research and Scholarly Activity

MURRAY STATE UNIVERSITY

### **For Immediate Release**

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### **Crump, Patton, and Russell 2013-2014 Research Scholar Fellowship Recipients**

The Office of Undergraduate Research and Scholarly Activity (URSA) has selected the recipients of its 2013-2014 Research Scholar Fellowships. Each fellowship will provide the student-faculty team with a \$1000 student scholarship provided by the MSU Foundation and a \$500 supply budget from URSA.

"This year's Research Scholar Fellowship applicants worked alongside their faculty mentors to develop meritorious research projects resulting in competitive proposals submitted to our Office of Undergraduate Research and Scholarly Activity," said Dr. Jay Morgan, Provost and Vice President for Academic Affairs. "Participation in active learning experiences such as undergraduate research builds skills and abilities such as responsibility, analysis, and teamwork that better prepares undergraduate students for success in graduate study and competitive careers."

The 2013-2014 Fellowship recipients are:

Chesika Crump, a junior biological sciences major emphasizing in pre-medicine, in the Jones College of Science, Engineering and Technology, was awarded for her proposal entitled "Experimental Analysis of the Effects of Animal-Assisted Therapy on the Physiological and Psychological Stress of First-Year Female Undergraduates." Dr. Terry Derting, Professor of Biological Sciences, will serve as faculty mentor. "Chesika is a responsible and dedicated student. Her motivation is demonstrated by her submitting a proposal to Active Minds and participating in their research program last year, in addition to writing an URSA proposal and becoming IRB certified," Derting stated. While participating in Active Minds, Crump presented her work in Washington D.C. "Chesika's work was excellent and she 'held her own' even though most other students in the Active Minds program were doctoral or master's students," Derting stated.

Crump's project focuses on the stress levels encountered by female undergraduates during their first academic year. Although counseling and physical therapy are the most commonly available resources to stressed students, they require a great deal of time and expense. Crump's project investigates the use of pet-assisted therapy and its effects on these students by analyzing [omit 'the'] indicators of stress. She will compare physiological and psychological stress levels between students exposed to pet-therapy dogs and a control group of students who do not engage in pet therapy. Ultimately, this research will provide experimental data that will contribute the literature measuring the impact of animal-assisted therapy on stress in a target population. If Crump's results indicate that pet-therapy has a desirable effect on reducing stress, then it may have potential as a new, low-cost approach to relieving stress. Crump is from Hopkinsville, Ky.

Dustin Patton, a junior electromechanical engineering technology major in the Jones College of Science, Engineering and Technology, awarded for his proposal entitled "Modeling and Estimation of an Ultrasonic based Neuro Navigation System using Smart Instrumentation." Dr. Sanjeevi Chitikeshi, Assistant Professor of Electromechanical Engineering and Technology, will serve as faculty mentor. "[Dustin] took several of my classes and he is one of the best students in the Electromechanical Technology Program. He took all electronics circuits classes and some programming classes with me, which are essential for this project. He did work hard in those classes and always thinks out of the box," Chitikeshi commented, "he is definitely able to carry out this project without any problem."

Patton's project centers around replacing or aiding the current vision based systems in brain surgery with an ultrasonic positioning system. The new system is comparable to a GPS system. An ultrasonic transmitter will be placed on a surgeon's probe while a set of ultrasonic receivers will be placed in a known inertial frame of reference, like the end of the patient's bed. Like a GPS system relies on satellite location transmission, the transmitters will transmit their tag signals while receivers at the fixed location will calculate the transmitter position(s). The goal of this work is to develop a system that has advantages when compared to the existing vision and camera based systems in surgery. The new system would cost less and provide similar accuracy with improved robustness. Patton is from Murray, Ky.

Haley Russell, senior creative writing major in the College of Humanities and Fine Arts, awarded for her proposal entitled "Why Is Everyone Sick? A Look at Austen's Illnesses." Dr. David Pizzo, Associate Professor of History, will serve as faculty mentor. "Haley is an extremely good student when she is working on a topic or project that excites her," Pizzo said, "she is highly motivated, self-directing, and very bright. I have no doubts whatsoever that Haley will produce a work that is both innovative and a pleasure to read. She is an *outstanding* writer and an effective presenter. She truly is a credit to independent research in the humanities."

Russell's project investigates the heavy focus on the Medical Reformation found in the writings of nineteenth century author, Jane Austen. Using Austen's use of medical practice and issues in her works, Russell analyzes the environment of Regency and Georgian England and the Medical Reformation as well as interpreting Austen's assessment of this environment. Russell plans to study abroad this winter in London and Paris with Murray State University where she will visit medical museums and the British Library where she will continue her research by working with a selection of Austen's original letters. She will also visit other sites that are important to the medical history in England and its surrounding areas. Russell is from Lexington, Ky.

Research Scholar Fellowships are reviewed through a competitive proposal process and have, since the program's inception, funded projects in disciplines spanning across the academic spectrum.

More information about URSA can be found online at <http://campus.murraystate.edu/services/ursa/>.