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2023

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UAMS scientists awarded $422,610 NSF grant to study regulation of emotion

Aug 3 2017

A team of University of Arkansas for Medical Sciences (UAMS) research scientists recently received a $422,610 grant from the National Science Foundation to study the mechanisms of control of emotional responses of men and women using functional magnetic resonance imaging (fMRI).

Keith Bush, Ph.D., an assistant professor in the UAMS College of Medicine Department of Psychiatry, is the principal investigator of the study funded by the National Science Foundation, a federal agency that funds nearly a quarter of all basic research conducted by U.S. colleges and universities. He and co-investigator Andrew James, Ph.D., an associate professor in the Department of Psychiatry, are with the Brain Imaging Research Center, part of UAMS' Psychiatric Research Institute.

Bush, whose background is in computer science, plans to use the Brain Imaging Research Center's MRI scanner to analyze the brain responses of 81 healthy people between ages 18 and 65. He will be studying multiple dimensions of human emotional expression -; such as positive versus negative or levels of arousal -; in an effort to understand the emotional responses of humans and how they control them.

"We're going to be showing them emotionally rich images while they are in the scanner," said Bush. "Using fMRI, we'll be able to see their brain reactions in real time and learn more about how we as humans decode the complex social messages within emotions and how we regulate our responses. There's a lot of evidence to suggest that if we gain an understanding of how the healthy brain reacts, then we will gain valuable insight into the mechanisms of prevalent mood and anxiety disorders."

"We know relatively little as to how specifically we deploy control systems to regulate our emotional brain," according to Clint Kilts, Ph.D., director of the Brain Imaging Research Center. "This makes this project vital in recognizing and correcting control issues for patients with problems like depression and bipolar disorder. This study intersects the fields of affective and computational neuroscience, machine learning, engineering control systems and the

technical advances of real-time functional brain imaging.

"If you're going to understand the mechanisms of the brain, you're going to have to first understand them in the healthy population," said Kilts. "This project will go a long way towards helping people understand, in a healthy sense, 'how am I doing in my own world.' It's going to generate new knowledge on a problem that we've been studying for centuries."

Source:

https://uamshealth.com/news/2017/08/03/uams-researchers-receive-national-science-foundation-grant-to-study-regulation-of-emotion/
