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By Ashly Stracener

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ARKADELPHIA, Ark.—Dr. Blake Johnson, assistant professor of biology at Ouachita Baptist University, has been awarded a $75,000 grant from the University of Arkansas for Medical Sciences' (UAMS) Arkansas Breast Cancer Research Program (ABCRP) to support his project "Identification and functional characterization of exosome-derived GPI anchored proteins in breast cancer." The goal of Johnson's research is to discover new and less-invasive methods to detect breast cancer earlier and to monitor the disease's progression during treatment instead of relying on intrusive surgery for testing.

Johnson's research and funding for the grant is supported by UAMS and its breast cancer research program, ABCRP. The research program, a division of UAMS' Winthrop P. Rockefeller Cancer Institute, has promoted innovative cancer research aimed at early detection and therapeutic intervention for more than 20 years.

"Grants of this significance indicate the type of work that our faculty are capable of doing," said Dr. Tim Knight, dean of Ouachita's J. D. Patterson School of Natural Sciences. "It is a credit to Dr. Johnson that he has built the potential for us to participate in this type of research in the short time he has been a part of the faculty."

Johnson's research began in September 2019 and will continue through August 2020. He will be joined in his research by Dr. Yuchun Du of the University of Arkansas-Fayetteville.

In contrast to utilizing methods that test and diagnose breast cancer through surgical procedures, Johnson plans to research biological markers of breast cancer that could be detected in real-time from body fluid.

"Various molecular cancer diagnostic assays have been developed for the management of early-stage breast cancer," Johnson said. "These assays, however, capture only a limited amount of tumor information as they rely on invasive biopsy tissue. This is problematic as aggressive tumors are often highly heterogeneous and not accurately assessed by small portions of tumor cells.

"Unlike tissue-based biopsies, which require invasive surgical procedures, extracting biological information from cancer-specific exosomes is non-invasive and would allow for early disease detection, as well as ongoing monitoring for signs of potential disease progression during therapeutic intervention," Johnson explained. "Diagnostic assays that provide real-time information and can be readily performed using only a small portion of bodily fluid are desperately needed in breast cancer."

Johnson began working at Ouachita in 2017. Originally from El Dorado, Ark., he graduated from Ouachita in 2003 with a Bachelor of Science in biology. He later earned his Master of Science in human molecular genetics from the University of Aberdeen in Scotland and his doctorate in biomedical sciences from the University of Texas' M.D. Anderson Cancer Center. Johnson also was trained as a post-doctoral fellow at UAMS' Winthrop P. Rockefeller Cancer Institute and has served as a visiting scientist at Stanford Research Institute.

For more information, contact Dr. Tim Knight at knightt@obu.edu or (870) 245-5528.

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