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Kaylan Kelsey ’18 Seeks to Improve Early Detection of Ovarian Cancer

In her classes at Gardner-Webb University, Kaylan Kelsey explored her interests in chemistry, discovering the properties of matter and chemical reactions. After graduating in 2018 with a major in chemistry and minor in mathematics, Kelsey is using her research skills to improve early detection of ovarian cancer, a disease that kills over 13,000 women a year.

“I am fortunate to be in a research group I am passionate about, and one that resonates highly with me,” observed Kelsey, a native of Warner Robins, Ga. “At the age of 4, my mother was left motherless. Her mother had a malignancy that was undiagnosed until the late stages of cancer, because of the lack of availability of an efficient cancer diagnostic tool at the time. Though over 40 years have passed, many ovarian cancers are still left undiagnosed until late stage without detection. Through my endeavors, I am fighting for women like my late grandmother, to greatly increase the survival rates of ovarian cancers through early detection and diagnosis.”

Kelsey is a doctoral student working in the lab of Dr. Ken Marcus at Clemson (S.C.) University. She was selected by Clemson professors to continue her studies in the program after participating in the National Science Foundation (NSF) Research Experience for Undergraduates at Clemson.

“I am striving to create a ‘liquid biopsy’-based technique as a noninvasive approach to ovarian cancer detection by isolating and identifying biomarkers in exosome-rich samples,” Kelsey said. “Exosomes are essential components of cell-to-cell communication, disease progression, metastasis, tumor growth, and other physiological processes that are continually investigated.”

Her GWU chemistry, biology and math professors gave her the foundation she needed to thrive in the NSF program and succeed as a graduate assistant. “Dr. Venita Totten (professor of chemistry) made a major impact on my academic career,” Kelsey affirmed. “I really appreciated the student-directed classes she instructed. This helped us not only to learn more, but to also begin to initiate assessments and projects. Dr. Totten’s approach helped us to grab the reigns in certain areas and direct the classroom atmosphere into what was most comfortable for us, while also tackling some difficult content. Also, she would remind us not to be overwhelmed by the many duties and responsibilities we had as students. She would comfort us by saying, ‘Life is just a series of jumping through hoops, let’s just jump through this one first so we can move forward.’”

Besides academics, Kelsey appreciated the Christian community at Gardner-Webb. “It was essential to my success as it allowed me to come into contact with a wonderful community of believers, and allowed me to build wholesome, and lifelong relationships with others while sharing the love of Christ,” she assessed.