

# *RCA IN THE NEWS*

## **ALUMNA'S RESEARCH COULD LEAD TO CURE FOR ROCKY MOUNTAIN SPOTTED FEVER**

Since graduating from Riverside Christian Academy in 2013, Jessica Osier has achieved many accolades in her college career at The University of Alabama in Huntsville. Osier won the Department of Chemistry's highest academic achievement award during her freshman year, but her most recent success is the research she has done that may lead to a new cure for Rocky Mountain spotted fever.

Osier's plan upon enrolling at UAH was to major in biology, but one of her early chemistry classes sparked a new interest in her. Eventually, Osier was hired as an undergraduate research assistant in Dr. Robert McFeeters' Lab.

"It did not take long to figure out that Jessica is an outstanding student," said Dr. McFeeters, an associate professor in the Department of Chemistry who teaches courses in biochemistry, biophysics, and structural biology. "Her exceptional performance in the classroom, tenacious work ethic, and vibrant personality naturally translated to remarkable research."

Dr. McFeeters' Lab is primarily focused on antimicrobial development and understanding the macromolecular interactions underlying infectious agents.

"The big picture is to characterize essential peptidyl-tRNA hydrolase (Pth) enzymes so that new antibiotics can be produced for diseases where current antibiotics are not as effective," said Osier.

Osier is researching the bacteria *Rickettsia rickettsii*, the causative agent of Rocky Mountain spotted fever. Last summer, she learned how to clone, express, and purify the Pth1 enzyme from *R. Rickettsii*.

"My plan is to screen for nucleotide inhibition to see if a certain concentration inhibits it, because if you inhibit its function, the bacterial cell dies," said Osier. "It's a time consuming process. Failures can be frustrating, but I can learn from them what might have gone wrong and what to do better."

Osier's goal is to become a professional researcher. She said she would like to go into research and development in the pharmaceutical industry, so that she can research cures or treatments for diseases.

Dr. McFeeters believes she will achieve her goals. "Over the last few years she has exceeded expectations, and I have no doubt that her success will continue throughout her career," he said.

RCA's President, James Bryant, said he is excited to see RCA's graduates excelling in college and beyond and is proud that Riverside can provide the education needed to help them reach their goals. "We are proud of Jessica and all that she has achieved throughout her college career. We wish her all the best," said Bryant.

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