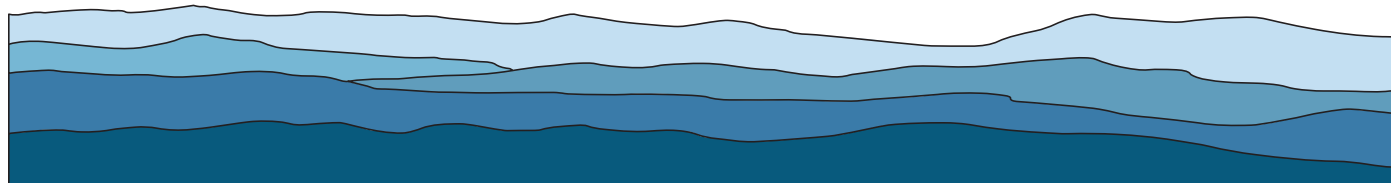


HIGHLANDS IN CHEMISTRY SEMINAR SERIES



AMANDA WOLFE

UNIVERSITY OF NORTH CAROLINA ASHEVILLE

“Development and Evaluation of Novel Antibiotic and Adjuvant Therapies to Treat Infectious Bacteria”

FEBRUARY 28, 2020

2:30PM

HAHN HALL NORTH 140

FACULTY HOST:
WEBSTER SANTOS

The increased emergence of bacterial resistance over the past two decades has greatly reduced the effectiveness of nearly all clinical antibiotics, bringing infectious disease to the forefront as a dire threat to global health. To combat these infections, new antibiotics and therapeutic strategies need to be rapidly discovered and developed. Using a combination of natural product isolation, synthesis, and biochemistry, our laboratory isolates and synthetically modifies natural product-based antibiotics and adjuvants to treat both Gram-positive and -negative pathogens. Over the past two decades, bacterial natural products have reemerged as an abundant source of novel bioactive molecules due to improvements in isolation and dereplication techniques. Using our in-house liquid culture screening method, we are able to rapidly screen and isolate novel molecules from bacterial mono- and co-culture, and then further elaborate via synthetic modification and evaluate each for their specific biological activities. Two such natural products classes, α -pyrones and dibenz[b.f]oxepin, and their synthetic analogs have been found to possess potent antibacterial activity, and the α -pyrones have been found to act as adjuvants to reactivate FDA approved antibiotics against resistant *Pseudomonas aeruginosa*.

