Antibiotics are some of the most widely known and widely used medications in the world. In fact, in 2009 people in the United States spent some $10.7 billion on antibiotics.1 Since their discovery, antibiotics have transformed the way bacterial infections are treated. However, due to overuse, the effectiveness of these life-saving drugs is being reduced and antibiotic resistant infections are becoming a more pressing problem.1 This surge in antibiotic resistance has warranted a development of new antibiotics and new synthetic pathways.2

The main objectives of this project were (1) to progress through a known synthesis of an Oxamazin derivative from the amino acids L-serine and L-threonine and (2) development of a solid-phase synthesis of heteroatom-activated beta-lactam antibiotics.