

MICHAEL BATES#, JON SERRA, and THEUNIS VAN AARDT, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074. **Trans-pterocarpan**s.

The objective of this research project is to synthesize trans-pterocarpan, an isoflavonoid that does not occur naturally. Trans-pterocarpan is of particular interest because they may display increased steroidal activity when compared to the naturally occurring cis-pterocarpan. First, a Williamson ether synthesis is performed using benzylchloride on the hydroxyl functional group of 2-hydroxy-4-methoxy-acetophenone. The protected acetophenone is then reacted with thallium trinitrate in order to rearrange the molecule into a protected phenylacetic ester compound. The protected phenylacetic ester is then combined with a similarly protected benzaldehyde via an aldol condensation. These aldol products are then converted to trans-pterocarpan through cyclization of the 5-membered ring followed by cyclization of the 6-membered ring using protection and deprotection methods. The chemistry and enantioselective synthesis of trans-pterocarpan is the primary focus of this presentation.