

## Total Synthesis of Complex, Bioactive Natural Products

Vanderwal, C. D.

Department of Chemistry  
University of California, Irvine  
United States  
*cdv@uci.edu*

Our laboratory has long focused on the development of especially concise strategies for the synthesis of structurally complex natural products with compelling biological activities. These exploits are usually destined to provide opportunities for deeper studies of their mechanism of action or aspects of their biosynthesis. To aid in these goals, we often design strategies that are amenable to the procurement of multiple members of a family of secondary metabolites. In this lecture, I will first describe our long-term efforts to develop efficient syntheses of the antiplasmodial isocyanoterpenes, as well as their analogues, to dig deeper into their potential as antimalarials. The second story will briefly describe how we put forth new hypotheses for biosynthesis of two different, significantly rearranged *Strychnos* alkaloids, and how our earlier successful synthesis of *Strychnos* family members permitted the execution of novel, presumably biomimetic, syntheses of the alsmaphorazines and alstonlarsines.

