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Strategies to create diverse collections of natural products.

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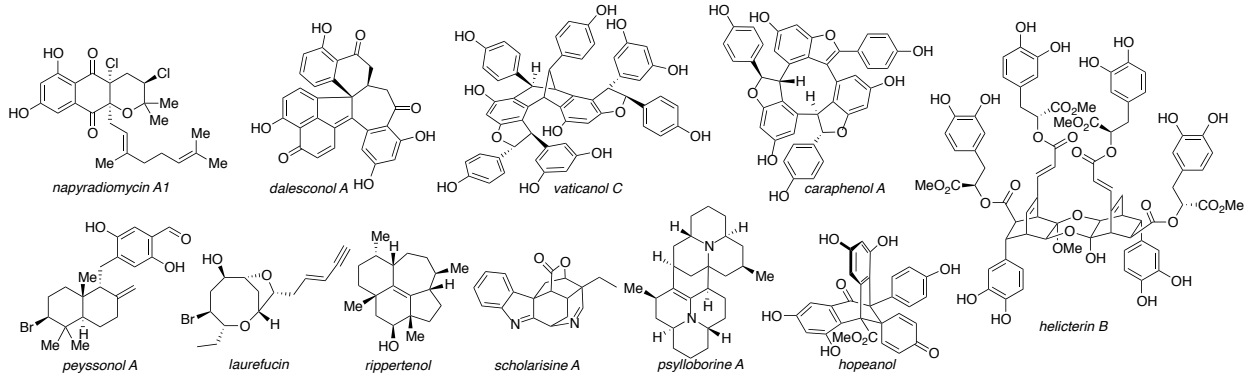
The total synthesis of natural products has long served as a driving force for discovering new chemical reactivity, testing the power of existing synthetic methods, and enabling biology and medicine. Indeed, retrosynthetic analysis, carbodiimide-based peptide coupling reagents, cation-π cyclizations, frontier molecular orbital theory, chiral auxiliaries, catalysts for asymmetric reactions, protecting groups, and numerous pharmaceuticals are but a few of the landmark achievements that have derived from its inspirational power. Hundreds of equally important discoveries remain, and our research program seeks to unearth some of those treasures.

This talk will focus specifically on our efforts to develop approaches capable of rapidly creating diverse collections of natural products as a means to explore their chemical biology profiles. These endeavors are predicated on the development of unique synthetic strategies and cascade sequences capable of creating significant architectural diversity from common building blocks, new methods and reagents for achieving asymmetric halogenation and halonium-induced cyclizations, and novel biosynthetic hypotheses.



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