

Necessity is the Mother of Invention: Natural Products and the Chemistry They Inspire

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Abstract:

The chemical synthesis of natural products provides an exciting platform from which to conduct fundamental research in chemistry and biology. Our group is currently pursuing the synthesis of several structurally complex natural products, with a particular focus on the development of new convergent fragment coupling and annulation strategies. The densely packed arrays of heteroatoms and stereogenic centers that constitute these polycyclic targets challenge the limits of current technology and inspire the development of new synthetic strategies and tactics. In concert with our total synthesis efforts, we have an active program on the development of new reductive coupling reactions, including Ni-catalyzed asymmetric reactions of C(sp³) electrophiles. This seminar will describe the latest progress in our target-directed synthesis and reaction development efforts.