

Searching for Selective Catalytic Reactions in Complex Molecular Environments

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This lecture will describe recent developments in our efforts to develop low-molecular weight catalysts for asymmetric reactions. Over time, our view of asymmetry has ebbed and flowed, with foci on enantioselectivity, site-selectivity and chemoselectivity. In most of our current work, we are studying issues of enantioselectivity as a prelude to extrapolation of catalysis concepts to more complex stereochemical settings where multiple issues are presented in a singular substrate. Moreover, we continuously examine an interplay between screening of catalyst libraries and more hypothesis-driven experiments that emerge from screening results. Some of the mechanistic paradigms, and their associated ambiguities, will figure strongly in the lecture.