

Professor

Dean Tantillo

Department of Chemistry
University of California, Davis

***Forks in the Road:
The Importance of Inherent
Carbocation Reactivity
in Terpene Biosynthesis***



Research interests encompass elucidating the origins of low activation barriers and high regio- and stereoselectivities for various cascade polycyclization reactions used by nature and by organic chemists to synthesize complex natural products; in designing new metal-promoted pericyclic reactions; and in applying quantum chemical predictions of NMR spectra to structure elucidation.

Website: http://chemistry.ucdavis.edu/faculty/department_faculty/dean_tantillo.html

Abstract

The results of quantum chemical calculations on the mechanisms of terpene-forming carbocation rearrangements will be described. Unusual phenomena, not usually associated with biological reactions, will be highlighted, e.g., concerted but highly asynchronous reaction steps in which multiple bond forming/breaking events are merged, pathways with post-transition state bifurcations, non-statistical dynamic effects.

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Host: Professor Thomas Hoye