

David Leitch *University of Victoria*

Mapping Chemical Space via High-throughput Experimentation: New Tools, New Reactions, and New Bicyclic Scaffolds

Exploring and mapping chemical and reaction space is integral to both the development of new synthetic methods and the identification of new small molecule drug candidates. Our research group is leveraging a 'low-barrier' high-throughput experimentation (HTE) platform to create new tools for experimental and predictive synthesis (*ACS Catalysis* **2021**, *11*, 5636–564; *Chem. Sci.* **2022**, *13*, 3477-3488), expedite reaction discovery for new carbon-element bond forming reactions (*Angew. Chem. Int. Ed.* **2020**, *59*, 17277-17281, *ACS Catalysis* **2022**, *12*, 6997-7003), and access new areas of chemical structure space with rigid, Csp³-rich bicyclics (*Angew. Chem. Int. Ed.* **2022**, *61*, e202204719). This talk will present our latest efforts in these thematic areas, with a focus on how these new developments could be used to enhance research efforts in small molecule API discovery and development.

