

CHEMISTRY SEMINAR 291

**Fun with Fluorine: from Deoxytrifluoromethylation
to para-Selective C–H Functionalization**

Date: 3/13/2020

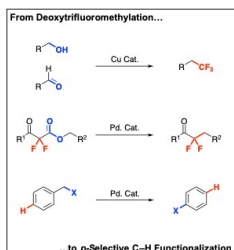
Time: 3:00—4:20 PM

Location: COB1 267

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contact : **Ben Stokes****bstokes2@ucmerced.edu****Abstract**

Simple O-based functional group (alcohols, ketones and aldehydes) remain amongst the most commonly exploited functional groups for synthetic transformations, and the extensive number of these motifs in natural products and pharmaceutically important building blocks provides a wide variety of potential substrates for transformations. In this field, we have developed new reactions and synthetic sequences using decarboxylative strategies and fluorinated alkenes to convert simple O-based groups into biomedically significant fluorinated substructures, and confirmed that these methods streamline the syntheses of target molecules. These methods enable synthetic chemists to efficiently access new fluorinated target molecules with physicochemical and biophysical properties that align with drug-like characteristics. Additionally, these explorations have revealed a new para-selective C–H functionalization reaction that enables access to medicinally relevant

substructures from simple feedstock aromatic hydrocarbons, such as toluene.

**About the Speaker**

Ryan A. Altman received a BSc in chemistry from Creighton University in 2003 and a PhD in organic chemistry from the Massachusetts Institute of Technology (MIT) in 2008, studying as a Pfizer and National Institutes of Health predoctoral fellow in the laboratory of Professor Stephen L. Buchwald. From 2008–2011, he trained as a National Institutes of Health postdoctoral fellow under the guidance of Professor Larry E. Overman at the University of California, Irvine, after which he accepted his current position in the Department of Medicinal Chemistry at The University of Kansas. The Altman research group works at the interface of synthetic organic and medicinal chemistries, with emphases in the areas of organometallic and organofluorine transformations and unique chemical reactivities enabled by fluorinated substructures. The groups' collaborative medicinal interests span a range of disease states, including pain, oncology, and aging.

