



**College of Liberal Arts and Sciences**  
**Spring 2022 Chemistry Seminar Series**  
**Friday, May 13<sup>th</sup>**

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**Directed  $\alpha$ -C(sp<sup>3</sup>)-H lactonization of acid-tethered lactams: Direct access to [3-2-1] bicyclic lactam-lactones**

**Abstract:** A transition metal- and base-free intramolecular carbon–oxygen bond-forming reaction between N-allyl lactams and tethered aliphatic carboxylic acids, is described. This N-iodosuccinimide-assisted chemo- and diastereoselective conversion of inherently inert sp<sup>3</sup> C–H bonds of cyclic amides to C–O bonds proceeds through a catch and release mechanism. The N-allyl group serves as a directing group in this cascade process. The method allows for direct and flexible construction of conformationally restricted [3-2-1] bicyclic lactam-lactones; a class of compounds of high medicinal interest.

**Bio:** Beng hails from Kuk village, Cameroon-Africa. He obtained a BS Chemistry degree at the University of Buea in 2001 where he graduated as joint top student in Chemistry. After joining the graduate program at East Tennessee State University in 2003 as a Margaret Sell Scholar, he sought to understand the "Kinetics and Mechanism of the Decomposition of Hydrogen Peroxide by Schiff Base Complexes of Copper (II)". He subsequently obtained an MS Chemistry degree in 2004 under the joint supervision of Professors Jeff Wardeska and Thomas Huang. Beng then headed to Emory University and embarked on Theoretical Physical Chemistry studies under the tutelage of Professor Joel Bowman. A burning desire to study Organic Chemistry instigated his transfer to the University of Arkansas where he obtained a Ph.D. degree in Physical Organic Chemistry in 2011, under the mentorship of late Professor Bob Gawley. His dissertation focused on the "Dynamics of Enantiomerization, Stoichiometric and Catalytic Resolution of Selected Organolithium Species". Following graduation, Beng joined the teaching staff at the University of Arkansas as instructor of Organic Chemistry and Organic Physiological Chemistry and was honored by the Dean of Student Affairs with two Golden Tusk Awards as recognition of "exemplary teaching and embodying the spirit of Students First". A year later, he moved to the University of California, Berkeley as an NIH postdoctoral fellow where he worked on the total synthesis of selected nitrogen-containing natural and unnatural products, under the

guidance of Professor Richmond Sarpong. In 2015, Beng began his independent career at Central Washington University as an Assistant Professor of Chemistry. Foremost among Dr. Beng's research interests at CWU is the goal of developing highly efficient and practical synthetic strategies for accessing nitrogen- and oxygen-containing cyclic compounds, which are regarded as privileged substructures in drug discovery programs. These compounds are then subjected to structure-activity-relationship studies through collaborative efforts.