Background (Bio) :

Osvaldo was born in Mexico and raised in Sacramento, California. He attended Sacramento City College and transferred to UCLA in 2006 where he worked as an undergraduate at the laboratories of Prof. Houk where his research focused on the use of quantum mechanical calculations to study organocatalysis. He obtained his B.S./M.S. in 2009 and completed his Ph.D. in 2012 (UC Davis) under the guidance of Prof. Tantillo. From 2012-2016 he worked as a postdoc with Prof. Kozlowski at the University of Pennsylvania where he used computational and experimental tools to study transition metal-catalyzed processes. In 2016 he started his independent position at the University of Maryland College Park as an Assistant Professor, and then promoted to Associate Professor in Summer 2021. In the Fall 2021, he moved to Texas A&M University where his research combined computational and experimental approaches to advance our understanding of iron- and photo-catalyzed reaction mechanisms. In addition to research interests, Osvaldo is involved in a series of initiatives to increase diversity in STEM including serving as president of the Alliance for Diversity in Science and Engineering (ADSE) and organizer of the annual Young Researchers Conference (YRC) and Breaking Barriers Through Chemistry (BBTC).

Diversity TALK:

Title: Dreamer's Pathway to Become a Professor: Tips and Tricks
Location: Leadership Studies Building Townhall: Thursday Oct 5th, 2:15-3:15pm

Abstract: This talk will be based on my own experience as an undocumented immigrant in this country for more than 25 years and navigating through the school and university system to fund my Ph.D. and beyond. Challenges to address diversity and the role of the Alliance for Diversity in Science in Engineering in addressing these issues will be covered briefly.

Recent news related to background:
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Research TALK:

Prof. Osvaldo Gutierrez (Texas A&M University)

Title: The advent and recent developments of Fe-catalyzed multicomponent cross-coupling reactions

Abstract: Despite advances in high-throughput screening methods leading to a surge in the discovery of catalytic reactions, our knowledge of the molecular-level interactions in the rate- and selectivity-determining steps of catalytic reactions, especially those involving highly unstable and reactive open-shell intermediates, is rudimentary. These knowledge gaps prevent control, suppression or enhancement, of competing reaction channels that can drive development of unprecedented catalytic reactions. In this talk, I will focus on our use of high-level quantum mechanical calculations, rigorously calibrated against experimental data, to interrogate the mechanisms and to guide the development of new catalysts and reagents for currently sluggish or unselective reactions. In particular, I will focus on our use of combined experimental and computational tools to understand and develop new (asymmetric) three-component iron-catalyzed radical cascade/cross-coupling reactions.