



THE UNIVERSITY OF
TOLEDO
1872

Department of Chemistry and Biochemistry

Colloquium Speaker



Professor Justin R. Ragains

Louisiana State University

"Visible Light Photochemistry and Electron Transfer in the Pursuit of Structure and Function"

Abstract: During the past eight years, visible light photochemistry has become a subject of intensive investigation. Visible light photoredox catalysis, in particular, has been at the center stage of this activity. Our own interests in such disparate fields as O-glycosylation, C-H functionalization, and the growth of stable organic thin films have fueled a research program aimed at visible light-promoted formation of radicals which have significant utility in addressing problems in these areas of research. Mechanistic insight that we have gained along the way has fueled our continuing efforts in, inter alia, O-glycosylation with a novel thioglycoside donor, C-H functionalization by radical translocation and polar crossover, and the covalent attachment of organic radicals to Au surfaces as an approach to thin film growth. While all of our methods were originally designed with photoredox catalysis in mind, there have been a number of surprises along the way that have led to the discovery of processes that don't require irradiation or which don't require a photocatalyst for a successful transformation. Mechanistic rationale for all of these observations will be provided.

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