



CHEMISTRY & BIOCHEMISTRY

SEMINAR PROGRAM

DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY
UNIVERSITY OF OKLAHOMA

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We Are Pleased to Announce a Seminar
Presented By

Shanteri Singh
University of Oklahoma

Friday, September 16, 2022
4:15 pm
National Weather Center
Room 1313

Synthesis of Isoprenoids: A Chemoenzymatic Approach

Isoprenoids are the largest class of natural products produced by microorganisms and plants, with broad applications in industries as food additives, fragrances, biofuels, pharmaceuticals, and platform chemicals. Despite their significance, obtaining sufficient amounts of compound for practical purposes is tedious, as they are usually obtained in very low quantities via extraction from natural sources. While total chemical syntheses of some isoprenoids have been achieved, purely synthetic methods are difficult due to the enormous structural complexity of these compounds, and the multistep synthetic process often results in extremely low yields. Further, issues related to metabolic flux and toxicity of the newly generated compounds to the host organism makes it challenging to use metabolic engineering approaches. To address these challenges, my research laboratory is developing sustainable chemoenzymatic strategies for the production of isoprenoids that both overcomes the growing economic and ecological concerns as well as to expand the structural diversity of isoprenoids. In this talk, I will begin with discussing utility of aromatic prenyltransferases for the late-stage diversification of natural products. The latter portion of the talk will illustrate our efforts on developing a multienzyme cascade platform, that addresses the hurdles associated with the chemical synthesis of isoprenoid building blocks.

Refreshments will be served at 4:00 pm

REMINDER ~ WEAR YOUR I.D.