2021-2022 POCC Lecture Series

May 26, 2022, 7:30 PM

Virtual reception to start prior to the seminar at 7 PM

Prof. Alison Narayan

University of Michigan

Biocatalysis and complex molecule synthesis

Virtual Seminar by Zoom (LINK)

The Philadelphia Organic Chemist's Club

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Abstract: Natural sources, such as plants, fungi and microbes, have historically provided compounds with potent pharmaceutical properties. While it can be challenging to build complex natural products in a lab using existing chemistry methods, Nature has perfected these biosynthetic pathways. The work described leverages the power of Nature's tools for building complex molecules to synthesize novel molecules with therapeutic potential. The reactivity and selectivity of enzymes from natural product pathways are often unparalleled in existing chemical methods. Enzymes with potential synthetic utility are used as a starting point for engineering biocatalysts with (1) broad substrate scope, (2) high catalytic efficiency, and (3) exquisite site- and stereoselectivity. These biocatalytic methods are employed to efficiently synthesize biologically active complex molecules.

Bio: Alison Narayan's main research interest is identifying enzymes from secondary metabolite pathways with potential synthetic utility and developing methods based on these biocatalysts to enable access to biologically active target molecules. Narayan holds a Ph.D. in organic chemistry from the University of California, Berkeley. She completed her undergraduate studies in chemistry at the University of Michigan, where she later returned as a postdoctoral research fellow in the lab of David Sherman. She started as an Assistant Professor in the Department of Chemistry and the Life Sciences Institute at Michigan in 2015. Since this time Alison and her research group have been recognized as a part of C&ENs Talented 12, an Alfred P. Sloan Fellow, a Cottrell Scholar and as the inaugural recipient of the Life Sciences Institute Outreach award.