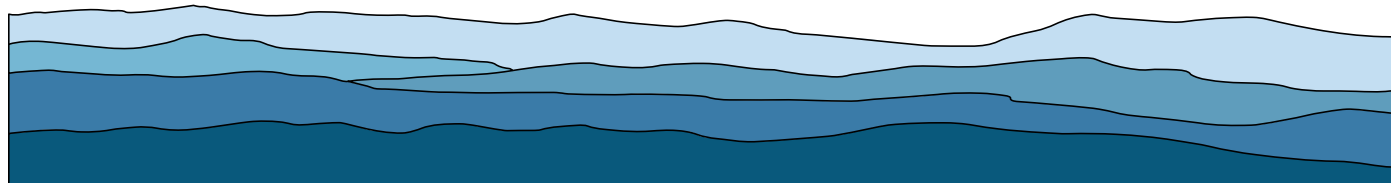


HIGHLANDS IN CHEMISTRY SEMINAR SERIES



JOHN TOSCANO

JOHNS HOPKINS UNIVERSITY

“Chemistry and Biology of Small Molecule Signaling Agents: HNO and H₂S”

The discovery of nitric oxide (NO) in the 1980's as an endogenously generated small molecule signaling species in mammalian systems led to the realization that other endogenously generated or ubiquitously present small molecules can also have signaling function. This presentation will focus on the chemistry and biology of two such small molecules of recent interest - nitroxyl (HNO) and hydrogen sulfide (H₂S). HNO has received significant attention as a novel biological agent with unique pharmacological properties, especially with regard to the treatment of heart failure. Given its inherent reactivity, donor molecules are required for the generation of HNO in situ, but unfortunately relatively few precursors to HNO exist. Although the physiological signaling associated with the endogenous generation of H₂S has been well studied over the past 20 years, the biochemical mechanisms associated with its physiological actions are still not clear. Recently, it has been found that H₂S-related or derived species are highly prevalent in mammalian systems and that these species may be responsible for some, if not the majority, of the biological actions attributed to H₂S. Among the most prevalent and intriguing of these species are hydropersulfides (RSSH), which can be present at significant levels.

SEPTEMBER 6, 2019

2:30PM

HAHN HALL NORTH 140

FACULTY HOST:
JOHN MATSON

