

## MS06 Structural Enzymology

MS6-01

Capturing Snapshots of Metalloenzymes in Action

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### Abstract

How do microbes live on the pollutant carbon monoxide? How do microbes split the triple bond of nitrogen gas? When it comes to performing difficult chemistry, microbes often combine a protein scaffold with a highly reactive metallocofactor, employing a hired gun if you will. Some metallocofactors are relatively simple – a single iron atom bound to an enzyme, whereas others are complex, and are best described as multi-metal assemblies or as “great metallocofactors.” In this presentation, audience members will hear about the “great metallocofactors” involved in one-carbon metabolism: nickel-iron-sulfur containing metallocofactors that perform the biological equivalent of the water-gas shift reaction and of the Monsanto process.