



# Inorganic Chemistry Seminar Series

Tuesday, September 10, 2019, 12:30 pm  
Verna and Peter Dauterive Hall (VPD), Room 105

## Professor Smaranda Marinescu

*Department of Chemistry  
University of Southern California*

### ***Bioinspired Coordination Complexes and Polymers for Energy Applications***

Research in the Marinescu group focuses on the development of novel catalytic systems for efficient *solar-to-fuel* technologies. Inspired by biological systems, we design molecular catalysts that involve hydrogen bonding networks capable of small molecule activation through multiple proton and electron transfers. We have shown that cobalt complexes with pendant proton relays (NH groups) act as highly efficient catalysts for the reduction of CO<sub>2</sub> to CO, and that the presence of the pendant NH moiety is crucial for catalysis.

We also explore the immobilization of metal complexes via metal-organic frameworks (MOFs). We have shown that metal dithiolene units can be successfully integrated into one- and two-dimensional frameworks, which display unique electronic properties – they catalyze with remarkable activity the electrocatalytic conversion of water into hydrogen, and their electrical conductivity is switchable from semiconducting to metallic.

Hosted by Professor Mark Thompson

*The scientific community is invited*

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