

UNIVERSITY OF RHODE ISLAND
Department of Chemistry
SEMINAR

Room 105 Beupre Center
3:00 p.m, Monday September 16, 2019

Prof. Sarah Soltau

Department of Chemical Sciences
Bridgewater State University

***“Using Proteins to Study Electron
Transfer Processes”***

HOST

Dugan Hayes
Department of Chemistry
401-874-5516

Using Proteins to Study Electron Transfer Processes

Sarah R. Soltau, Department of Chemical Sciences, Bridgewater State University

My research group is examining protein electron transfer in metalloproteins to understand both natural electron transfer processes and to develop new electron transfer reactions from non-native systems. In this talk, I will discuss two particular projects we are working on my laboratory. In the first project, we are working to generate photocatalytic hydrogen from protein systems as a potential alternative fuel source. This work involves appending Photosystem I from the green alga *Chlorella vulgaris* to an iridium hydrogen evolution catalyst, [Cp*Ir(4,4'-dimethoxy-2,2'-bipyridine)]Cl, or using other smaller proteins to append a variety of catalysts and photosensitizers. In the second project, I will also discuss work underway to characterize the binding site and electron transfer pathway in an enzyme, 3-Ketosteroid-9 α -Hydroxylase (KshAB), which is involved in steroid metabolism in pathogenic bacteria. This work involves computational and experimental approaches to determine the binding site of interaction between the oxygenase and reductase components of the protein complex.