

**TSRC Final Schedule**  
**Biological and Bioinspired Redox Catalysts**  
**Organizers: John Peters and Hannah Shafaat**

**Telluride Intermediate School; 725 W. Colorado Ave.**

<b>Tuesday, July 16</b>	
7:30am - 8:00am	Breakfast
8:00am - 8:15am	Introduction and opening remarks
8:15am - 8:50am	<b>John Peters</b> "Brokering Electrons in Coupled Endergonic and Exergonic Redox Reactions Through Electron Bifurcation"
8:50am - 9:25am	<b>David Beratan</b> "On the Molecular Origins of Inverted Potentials"
9:25am - 10:00am	<b>Leif Hammarstrom</b> "Following The PCET Steps of Solar Fuel-Forming Reactions"
10:00am - 10:30am	Coffee Break
10:30am - 11:05am	<b>Anne Jones</b> "Enzyme Electrocatalysis"
11:05am - 11:40am	<b>Olaf Rudiger</b> "PCET at the Active Site of [FeFe] Hydrogenases"
11:40am - 1:25pm	Lunch (In Town, On Your Own)
1:25pm - 2:00pm	<b>Zach Heiden</b> "Influence of Lewis Acids on Electron Transfer: Insight From Biological Systems"
2:00pm - 2:35pm	<b>Daniel Suess</b> "Reactivity and Electronic Structure of Iron-Sulfur Clusters"
2:35pm - 3:10pm	<b>Gordana Dukovic</b> "Elucidating How Photoexcited Semiconductor Nanocrystals Drive Redox Enzyme Catalysis"
3:10pm - 3:45pm	<b>Louise Berben</b> "Managing Hydrides for Small Molecule Reduction"

<b>Wednesday, July 17</b>	
7:30am - 8:00am	Breakfast
8:00am - 8:35am	<b>Fraser Armstrong</b> "Enzymes in Electrified Nanospace"
8:35am - 9:10am	<b>Alexey Silakov</b> "Oxygen Tolerance of Fe-Fe Hydrogenases"
9:10am - 9:45am	<b>David Mulder</b> "Protein Control for Catalytic Bias by [FeFe]-hydrogenase"
9:45am - 10:15am	Coffee Break
10:15am - 10:50am	<b>Mike Hall</b> "Computational Studies of Redox Mechanisms"
10:50am - 11:25am	<b>Shelley Minteer</b> "Mediated and Direct Enzymatic Bioelectrocatalysis"
11:25am - 1:25pm	Lunch (On Your Own)
1:25pm - 2:00pm	<b>Sean Elliott</b> "Challenges and Opportunity in Redox Enzyme Discovery: The BthA Story"
2:00pm - 2:35pm	<b>Aaron Appel</b> "Designing Electrocatalysts for Alcohol Oxidation Based on First Row Transition Metal Complexes"
2:35pm - 3:10pm	<b>Kyle Lancaster</b> "Outer-Sphere Gating of Substrate Redox by Cytochrome P460"
3:10 pm – 3:45 pm	<b>Andy Borovik</b> "Designed Artificial Metalloproteins: Probing Molecular Complexity within Active Sites"
6:00pm - 8:00pm	Picnic

<b>Thursday, July 18</b>	
7:30am - 8:00am	Breakfast
8:00am - 8:35am	<b>Lisa Olshansky</b> "Molecular Gymnastics for Bioinspired Energy Transduction"
8:35am - 9:10am	<b>Steve Ragsdale</b> "EC Mechanisms and Conformational Rearrangements Driving Organometallic Catalysis by Acetyl-CoA Synthase, a Key Enzyme in Anaerobic CO <sub>2</sub> Fixation"
9:10am - 9:45am	<b>Bojana Ginovksa</b> "Mechanisms of Methyl Coenzyme M Reductase"
9:45am - 10:15am	Coffee Break
10:15am - 10:50am	<b>Frank Neese</b> "Combined Experimental and Theoretical Study on CO <sub>2</sub> Activation Catalysts"
10:50am - 11:25am	<b>Jenny Yang</b> "Thermodynamic Considerations for Selective and Reversible CO <sub>2</sub> /HCO <sub>2</sub> -Conversion"
11:25 am – 12:00 pm	<b>Wendy Shaw</b> "CO <sub>2</sub> Hydrogenation with Molecular Catalysts with an Outer Coordination Sphere"
12:00 pm	Adjourn for the Day – Free Afternoon

<b>Friday, July 19</b>	
8:00am- 8:30am	Breakfast
8:30am – 9:05am	<b>Serena DeBeer</b> “Beyond the E0 State of Nitrogenase: Spectroscopic Studies of Intermediates in Biological Dinitrogen Reduction”
9:05am - 9:40am	<b>Simone Raugei</b> “Computational Insights on the Reductive-Elimination Mechanism That Activates Nitrogenase for N <sub>2</sub> Reduction”
9:40am - 10:10am	Coffee Break
10:10am - 10:45am	<b>Paul King</b> “Photochemical Activation and Reduction of N <sub>2</sub> ase”
10:45am - 11:20am	<b>Oliver Einsle</b> “Activating N <sub>2</sub> vs. N <sub>2</sub> O: What Does it Take, and What Do We Know”
11:20am - 1:25pm	Lunch (On Your Own)
1:25pm - 2:00pm	<b>Seigo Shima</b> “Structure and Function of [Fe]-hydrogenase from Methanogenic Archaea”
2:00pm - 2:35pm	<b>Hannah Shafaat</b> “Model Nickel Metalloproteins for Small Molecule Activation”
2:35pm - 3:10pm	<b>Oliver Lenz</b> “A Fresh Look at the Catalytic Center of [NiFe]-hydrogenase”
3:10 pm – 3:25 pm	Closing Remarks
5:00 pm	Group gathering in Mountain Village (details TBA)