

Telluride Science Research Center
Workshop on Protein Dynamics
 August 1-5, 2005

Program of the Workshop

Monday, August 1, morning		
8:15 am-8:30 am	Doug Tobias	<i>Welcome and opening remarks</i>
8:30 am-9:20 am	Paul Champion	<i>Experimental studies of structure, function, and coherent oscillations in biomolecules</i>
9:20 am-10:10 am	Tim Sage	<i>Vibrational dynamics of iron in biological molecules</i>
10:10 am-11:00 am	John Straub	<i>Vibrational energy relaxation in proteins</i>
11:00 am-11:15 am	Break	
11:15 am-12:05 pm	Ralph Jimenez	<i>Resonant four wave mixing femtosecond spectroscopy as a probe of protein dynamics</i>
12:05 pm-12:55 pm	Dongping Zhong	<i>Ultrafast protein dynamics with biological mutation</i>

Monday, August 1, evening		
7:30 pm-8:20 pm	Yasuhisa Mizutani	<i>Protein dynamics of hemoglobin and myoglobin: time-resolved resonance Raman study</i>
8:20 pm-9:10 pm	Phil Anfinrud	<i>Unveiling functional protein motions with picosecond x-ray crystallography and molecular dynamics simulations</i>
9:10 pm-10:00 pm	Markus Meuwly	<i>The effect of dynamics on protein-ligand interactions</i>

Tuesday, August 2, morning		
8:30 am-9:20 am	Charlie Brooks	<i>The role of environment on conformational transitions in peptides and proteins</i>
9:20 am-10:10 am	Jessica Swanson	<i>Insights into protein-protein and protein-ligand association from end-point free energy calculations</i>
10:10 am-11:00 am	Paolo Carloni	<i>Enzymatic dynamics and function investigated by molecular simulation</i>
11:00 am-11:15 am	Break	
11:15 am-12:05 pm	Janos Lanyi	<i>Mechanism of proton transport from crystallographic structures of the nine states of the bacteriorhodopsin photocycle</i>
12:05 pm-12:55 pm	Dwayne Miller	<i>Coherent control of retinal isomerization in bacteriorhodopsin</i>

Tuesday, August 2, evening	
Pinhead Town Talk Extravaganza! Conference Center in Mountain Village 7:30 pm	
John Straub	<i>A lively tour of the periodic table</i>
Carl Lineberger	<i>Lasers: the light fantastic</i>

Wednesday, August 3, morning		
8:30 am-9:20 am	Burkhard Bechinger	<i>Investigations of polypeptide topology and rotational diffusion in aligned membranes by ²H and ¹⁵N solid-state NMR spectroscopy</i>
9:20 am-10:10 am	Gianluigi Veglia	<i>Toward the elucidation of structure and dynamics of membrane protein complexes by NMR</i>
10:10 am-11:00 am	Ichio Shimada	<i>NMR strategy for membrane proteins-ligands interactions</i>
11:00 am-11:15 am	Break	
11:15 am-12:05 pm	Steve White	<i>How membranes shape protein structure, and vice versa</i>
12:05 pm-12:55 pm	Alfredo Freites	<i>Two stories of membrane protein stability and dynamics: the S4 voltage-sensor and the SecY translocation channel</i>

Wednesday, August 3, evening		
7:30 pm-8:20 pm	Art Palmer	<i>Protein motions in catalysis, binding, and folding</i>
8:20 pm-9:10 pm	Martin Stone	<i>From NMR measurements of protein dynamics to thermodynamics: recent advances and future challenges</i>
9:10 pm-10:00 pm	Masatsune Kainosho	<i>Optimal isotope labeling for protein structure determination by NMR: the SAIL method</i>

Thursday, August 4, morning		
8:30 am-9:20 am	Kevin Plaxco	<i>Unraveling the unfolded state</i>
9:20 am-10:10 am	Joan-Emma Shea	<i>Oligomerization of the (25-35) fragment of the Alzheimer Aβ peptide</i>
10:10 am-10:25 am	Break	
10:25 am-11:15 am	Nobuhiro Go	<i>Consistency for folding and inconsistency for function: switch mechanism of bacterial flagellar supercoiling as an example</i>
11:15 am-12:05 pm	Andrea Markelz	<i>Terahertz dielectric sensitivity to protein dynamics</i>

Thursday, August 4, evening	
6:00 pm	BBQ! on lawn near river adjacent to Mountainside Inn

Friday, August 5, morning		
8:30 am-9:20 am	Paul Fenimore	<i>Protein energy landscapes, solvent α-slaving and hydration β-coupling</i>
9:20 am-10:10 am	Robert Young	<i>Solvent, hydration, and protein – interactions and motions</i>
Break		
10:25 am-11:15 am	Martin Weik	<i>The relation between protein and solvent dynamics as studied by neutron scattering and temperature-controlled x-ray crystallography</i>
11:15 am-	Doug Tobias	<i>Closing remarks, including some research results</i>