



The Center for Biomolecular Structure and Dynamics
2nd Annual CoBRE Research Retreat
August 18-20, 2013
Double Arrow Resort, Seeley Lake, MT

2013 CBSD CoBRE Research Retreat Abstract Titles

Overview of Year 2 of the CBSD CoBRE

Stephen R. Sprang, Director | UM, Center for Biomolecular Structure & Dynamics

The BioSpectroscopy Core Research Laboratory

Sandy Ross, Chelle Terwilliger | Department of Chemistry & Biochemistry

CBSD Year 2: Molecular Computational Core Facility Activities

Michael Braden, PhD, Manager; William Knight, PhD, System Administration; John Gerdes, PhD, Director

Current State of the NMR Spectroscopy Core at UM

Ed Rosenberg and Earle Adams | Department of Chemistry

Macromolecular X-ray Core Facility

TC Mou, Manager; Stephen Sprang, Director | Center for Biomolecular and Dynamics

How can voltage control an enzyme?

Susy Kohout | Montana State University, Department of Cell Biology & Neuroscience

Kinases as Machines

Elizabeth Goldsmith | University of Texas Southwestern, Department of Biochemistry

Cellular cofactors of RNA regulator FBF-2

Ekaterina Voronina, Division of Biological Sciences Department | CoBRE Career Development Faculty

Catalysis of L-Tryptophan Dioxygenation by Indoleamine 2,3-Dioxygenase (IDO1) Proceeds via Random Binding of Substrates

Valeriy Smirnov, Chemistry Department | CoBRE Junior Investigator

Structural and Functional Analysis of Genetic Polymorphisms in the P-glycoprotein (ABCB1) Drug Transporter

Erica Woodahl, Biomedical & Pharmaceutical Sciences Department | CoBRE Junior Investigator

Incorporating Halogen Bonding Interactions for Catalysis

Orion Berryman, Chemistry Department | CoBRE Junior Investigator

Catalytic mechanism of mammalian adenylyl cyclase: a theoretical investigation

Xi Chu, Chemistry Department | CoBRE Junior Investigator

Structural studies of the envelope glycoprotein from Junin arenavirus

Klara Briknarova, Chemistry Department | CoBRE Junior Investigator

Characterization of Rift Valley fever virus nucleocapsid protein-RNA binding interactions

Mary Ellenbecker, Division of Biological Sciences Department | Graduate Student (J. Stephen Lodmell)

Alternative conformations of yeast iso-1-cytochrome c: effects of a gate keeping residue on heme crevice dynamics

Levi McClelland, Chemistry Department | Graduate Student (Bruce Bowler)

Cloning IDO for structural and dynamics studies of enzyme catalysis

Laura Dameron, Chemistry Department | Undergraduate Research Assistant (Valeriy Smirnov)

Active-Site Monovalent Cations Revealed in a 1.55 Å Resolution Hammerhead Ribozyme Structure

Eric Schultz, Division of Biological Sciences Department | Incoming Postdoctoral Fellow (Brent Ryckman)

Catalysis in Bacterial and Mammalian Adenylyl Cyclase: A Comparative Computational Study

David Hahn, Chemistry Department | Postdoctoral Fellow (Xi Chu)

Activation of Heterotrimeric G Proteins: A Dynamic Process

Labe A. Black, Chemistry Department | Graduate Student (Sandy Ross and Stephen Sprang)

Probing the mechanism of dioxygen (O₂) inhibition during human indoleamine 2,3-dioxygenase catalysis

Ayodele Kolawole, Chemistry Department | Postdoctoral Fellow (Valeriy Smirnov)

Expression, Purification and Characterization of human P-glycoprotein expressed in Insect Cells

Harmen Steele, Biomedical & Pharmaceutical Sciences Department | Postdoctoral Fellow (Erica Woodahl)

In Silico Evolution of RNA Structure

Douglas Raiford | University of Montana, Department of Computer Science

Brain Research through Advancing Innovative Neurotechnologies: the good, the bad, and the ugly.

Thomas Hughes | Montana State University, Department of Cell Biology & Neuroscience

Structural Analysis of Cytomegalovirus encoded Chemokine

Rebecca Hendrix, Undergraduate Student | UM, Div. of Biological Sciences

***Using cysteine mutations to probe protein-protein interactions among domains of Human fibronectin/
In vitro expression of the stable signal peptide from the Junin Arenavirus Envelope Glycoprotein***

Casey Schlenker, Research Assistant | UM, Dept. of Chemistry

P-glycoprotein: Purification, Incorporation and Activity Nanodiscs

Harmen Steele, Graduate Student | UM, Dept. of Chemistry

Characterization of Double ALEXA Labeled G-Proteins for Single Molecule Studies

Kristian Stipe, Undergraduate Student | UM, Dept. of Chemistry

The effects of glutamate transporter density on ambient glutamate levels

Weinan Sun, Graduate Student | UM, Dept. of Biological & Pharmaceutical Sciences

Study on the binding affinity between RIZ1 constructs and pRb

Yizhi Sun, Graduate Student | UM, Dept. of Chemistry

Characterization of dynein light chain function in FBF-2 regulatory activity

Xiaobo Wang, Laboratory Technician | UM, Div. of Biological Sciences

Biochemical and Biophysical Study of the AAA+ ATPase Domain in Human Soluble Adenylate Cyclase

Baisen Zeng, Graduate Student | UM, Dept. of Chemistry