



**Center of Biomedical Research Excellence (COBRE)
in Protein Structure and Function
External Advisory Board Meeting**

March 3 & 4, 2005

Meeting Sites:

- March 3: Simons Auditorium, Higuchi Biosciences Center, 8:00 a.m.-2:00 p.m.
Structural Biology Center, 2:10 a.m.-5:00 p.m.
- March 4: Room 3005, Malott Hall, KU Campus, 8:00-9:25 a.m.
Room 5052, Malott Hall, KU Campus, 9:25-11:00 a.m.

COBRE PARTICIPANTS

COBRE Investigators

(* = graduated)

Brian Blagg (KU)	Identification of Hsp90 Cochaperones, Immunophilins, and Client Proteins
Heather Desaire (KU)	Structural Characterization of Glycoproteins using Mass Spectrometry
Susan Egan (KU)	Protein-Protein Interactions Required for Transcription Activation by RhaR
Julian Limburg (KU)	Structure and Function of Bacterial Prolyl-4-Hydroxylase
William Picking (KU)*	Subversion of Eukaryotic Cell Function by Shigella
Emily Scott (KU)	Structure and Function of Mammalian Cytochromes P450
Jeffrey Staudinger (KU)	Crystallization of Pregnane X Receptor Splice Variants
Liskin Swint-Kruse (KU School of Medicine)	Elucidating Structural Elements that Fine-Tune the Functions of Members in a Genetic Regulatory Protein
Anna Zolkiewska (KSU)*	Structure and Function of Cell Adhesion Domain of ADAM12

Pilot Project Directors

Xue-Wen Chen (KU)	Computational Proteomics: Protein Interaction Prediction
David Eichhorn (WSU)	Synthesis of Model Complexes for Nitrile Hydratase
Audrey Lamb (KU)	Structural Analysis of Siderophore Biosynthesis
Shiguang Liu (KU School of Medicine)	Identification of Inhibitors and Substrates of Phex
Silvia Mora (KSU)	Protein Interactions that Regulate Leptin Secretion
Robert Rowland (KSU)	Structure and Nucleolar Function of SARS N Protein
Asma Zaidi (KU)	Trafficking of the Plasma Membrane Ca ²⁺ -ATPase to Rafts

New Faculty Recruits

James Bann (WSU)	Structure and Mechanism of CS1 Pilus Assembly
Roberto de Guzman (KU)	Protein-Protein Recognition Involved in Hematopoiesis
Qize Wei (KSU)	Pitx2A Target Gene Regulation and Signaling Pathway Function

Mentors for Current COBRE Investigators

Glen Andrews (KU School of Medicine-Swint-Kruse)	George Bousfield (WSU-Desaire)	Mark Richter (KU-Egan)
Andrew Borovik (KU-Limburg)	Robert Hanzlik (KU-Blagg)	Mario Rivera (KU-Scott)
	Mary Lou Michaelis (KU-Staudinger)	

COBRE PARTICIPANTS, cont.

External Advisory Board (* = no longer serving)

Kathryn Ely	The Burnham Institute
Brian Matthews	University of Oregon
Gary Gilliland	National Institute of Standards and Technology
Carol Post	Purdue University
Stephen Sprang	University of Texas Southwestern Medical Center
Gerald Carlson*	University of Missouri-Kansas City
Catherine Fenselau*	University of Maryland
Michael Rossmann*	Purdue University

Inter-Campus Liaisons

James Calvet	University of Kansas Medical Center
Gunda Georg	University of Kansas
William Hendry	Wichita State University
Michael Kanost	Kansas State University

Internal Advisory Board (formed 2/2005)

Heather Desaire	University of Kansas
William Picking	University of Kansas
Jeffrey Staudinger	University of Kansas

Core Personnel

Robert Hanzlik	Linda Carlyle	Michail Alterman
Mary Lou Michaelis	Weijun Huang	Tatyana Duzhak
Cynthia Beall	Ernst Schönbrunn	Boris Kornilaev

COBRE Center in Protein Structure and Function
 External Advisory Board Meeting
 Symposium and Poster Session
 March 3-4, 2005
 Agenda

Thursday, March 3, 2005
Simons Auditorium, Higuchi Biosciences Center

8:00-8:30	Arrival and Refreshments	
8:30-8:55	Robert Hanzlik	Introductions and review of COBRE Center
8:55-9:15	Heather Desaire	Glycosylation profiling in hormone isolates using enzymatic digestion and mass spectrometry
9:15-9:30	Silvia Mora	Protein-protein interactions that regulate leptin secretion in adipocytes
9:30-9:45	Shiguang Liu	Identification of inhibitors and substrates of Phex
9:45-10:00	David Eichhorn	Modeling the active site of nitrile hydratase
10:00-10:20	Michail Alterman	COBRE Core C: Protein Purification Group
10:20-10:35	BREAK	
10:35-10:55	Brian Blagg	From protein folding to protein degrading: The impact of Hsp90 inhibitors
10:55-11:15	Susan Egan	Mechanisms of transcription activation by the <i>E. coli</i> RhaS protein: An AraC family member
11:15-11:30	Robert Rowland	Putative nucleolar localization signal domain in SARS CoV nucleocapsid protein
11:30-11:50	Jeffrey Staudinger	The molecular mechanism of resistance to weight loss
11:50-Noon	BREAK	
Noon-1:10	LUNCH	McCollum Conference Room 129 (COBRE participants) Structural Biology Center Conference Room (EAB meeting)
1:10-1:15		Return to Simons Auditorium
1:15-1:30	Julian Limburg	Structure and function of a bacterial prolyl-4 hydroxylase
1:30-1:45	Liskin Swint-Kruse	Allosteric determinants across the LacI/GaIR family
1:45-2:00	Emily Scott	Structure-function of human cytochrome P450 2A enzymes

Thursday, March 3, 2005 (cont.)
Structural Biology Center

2:00-2:15 Break and relocate to SBC for one-on-one conferences

	Gary Gilliland 109 SBC	Brian Matthews 171 SBC	Carol Post 173 SBC	Stephen Sprang 113 SBC
2:15-2:40	Audrey Lamb	David Eichhorn	Silvia Mora	Jeff Staudinger
2:40-3:05	Julian Limburg	Liskin Swint-Kruse	Heather Desaire	Shiguang Liu
3:05-3:30	Weijun Huang	Jianwen Fang	Asma Zaidi	Xue-Wen Chen

3:30-4:00 Break and Tour Structural Biology Center

4:00-4:55 Poster Session 180 Structural Biology Center

4:55-5:00 Robert Hanzlik Adjourn

Friday, March 4, 2005
Room 3005, Malott Hall (main campus)

8:00-8:15	Arrival and Refreshments	
8:15-8:30	Asma Zaidi	Compartmentalization of plasma membrane Ca ²⁺ -ATPase into neuronal lipid raft domains
8:30-8:45	Audrey Lamb	Siderophore biosynthesis in <i>Pseudomonas Aeruginosa</i>
8:45-9:00	Xue-Wen Chen	Computational proteomics: Protein interaction prediction
9:05-9:25	Weijun Huang	COBRE Core B: Protein Structure Laboratory (X-ray Crystallography)

Room 5052, Malott Hall

9:25-10:30		External Advisory Board Executive Session
10:30-11:00	External Advisory Board Bob Hanzlik Mary Lou Michaelis	Wrap-up session: EAB and COBRE Leaders
11:00	Robert Hanzlik	Adjourn

**External Advisory Board Meeting
Poster Session**

March 3, 2005

4:00-4:55 p.m.

180 Structural Biology Center

Protein Flexibility Modeling Using Kernel Methods

Xue-Wen Chen and Jemery Chen, Department of Electrical Engineering and Computer Science, School of Engineering, The University of Kansas, Lawrence, KS.

Siderophore Biosynthesis in *Pseudomonas Aeruginosa*

Audrey Lamb, Department of Molecular Biosciences, The University of Kansas, Lawrence, KS.

Engineering the Lung-Specific Cytochrome P450 2A13 for Recombinant Expression, Facile Purification, and Increased Solubility.

Jason Sanders, Brian D. Smith and Emily E. Scott, Department of Medicinal Chemistry, University of Kansas, Lawrence, KS.

The Adenylyl Cyclase Activator Forskolin induces CYP3A as an Agonist Ligand for PXR

Xunshan Ding and Jeffrey Staudinger, Department of Pharmacology and Toxicology, The University of Kansas, Lawrence, KS.

Gugulipid, CYP3A and Herb-Drug Interactions

Dan E. Brobst¹, Xunshan Ding¹, Bryan J. Goodwin², and Jeffrey Staudinger^{1*}

¹The University of Kansas, Lawrence, KS, and ²GlaxoSmithKline, Research Triangle Park, NC.

The Influence of Nafcillin on Cytochrome P450 Gene Expression

Kristin Lichti and Jeffrey Staudinger, Department of Pharmacology and Toxicology, The University of Kansas, Lawrence, KS.

Mechanisms of Transcription Activation by the *E. coli* RhaS Protein: An AraC Family Member

Ana Kolin, Jason Wickstrum and Susan M. Egan, Department of Molecular Biosciences, University of Kansas, Lawrence, KS

Model Complexes for Thiolate-Coordinated Metalloenzymes

David M. Eichhorn, Department of Chemistry, Wichita State University, Wichita, KS

A Novel Derivatization Process for Oligosaccharides

Dilusha S. Dalpathado, Hui Jiang, Markus A. Kater and Heather Desaire, Department of Chemistry, The University of Kansas, Lawrence, KS.

Compartmentalization of the Plasma Membrane Ca²⁺-ATPase into Neuronal Lipid Raft Domains: A Novel Mechanism for the Regulation of Local Ca²⁺ Signaling in Neurons.

Jiang, Lei²; Fernandes, Denzyl¹; Michaelis, Mary L^{1,2}; and Zaidi, Asma², ¹Department of Pharmacology and Toxicology and ²Center for Neurobiology and Immunology Research, Higuchi Biosciences Center, University of Kansas, Lawrence, KS.

The P450cam G248E Mutant Covalently Binds Its Prosthetic Heme Group

Julian Limburg¹, Laurie L. LeBrun² and Paul R. Ortiz de Montellano², ¹Department of Chemistry, Lawrence, KS, and ²University of California, San Francisco, CA.

NMR Structure Determination of the TAZ Domains of CBP and Their Complexes with CITED2 and HIF-1alpha

Roberto de Guzman, Department of Molecular Biosciences, The University of Kansas, Lawrence, KS.

Use of the Yeast Two-Hybrid System to Identify Leptin Binding Partners

Shengzhi Wang, Cormac O'Reilly and Silvia Mora, Division of Biology, Kansas State University, Manhattan, KS.

Using Networks to Identify Functionally Relevant Differences Between Similar Protein Structures

Liskin Swint-Kruse, Department of Biochemistry and Molecular Biology, University of Kansas School of Medicine, Kansas City, KS.

The Design and Synthesis of Novobiocin Analogues as HSP 90 Inhibitors

Xiao Ming Yu, Gang Shen, Huijong Han and Brian Blagg, Department of Medicinal Chemistry, University of Kansas, Lawrence, KS.