



Welcome!

Participants and Advisors

June 24, 2004

NIH Center of Biomedical Research Excellence
in Protein Structure and Function
www.medchem.ku.edu/COBRE



The University of Kansas

COBRE-PSF
The University of Kansas
Kansas State University
Wichita State University
KU School of Medicine

Kansas State University

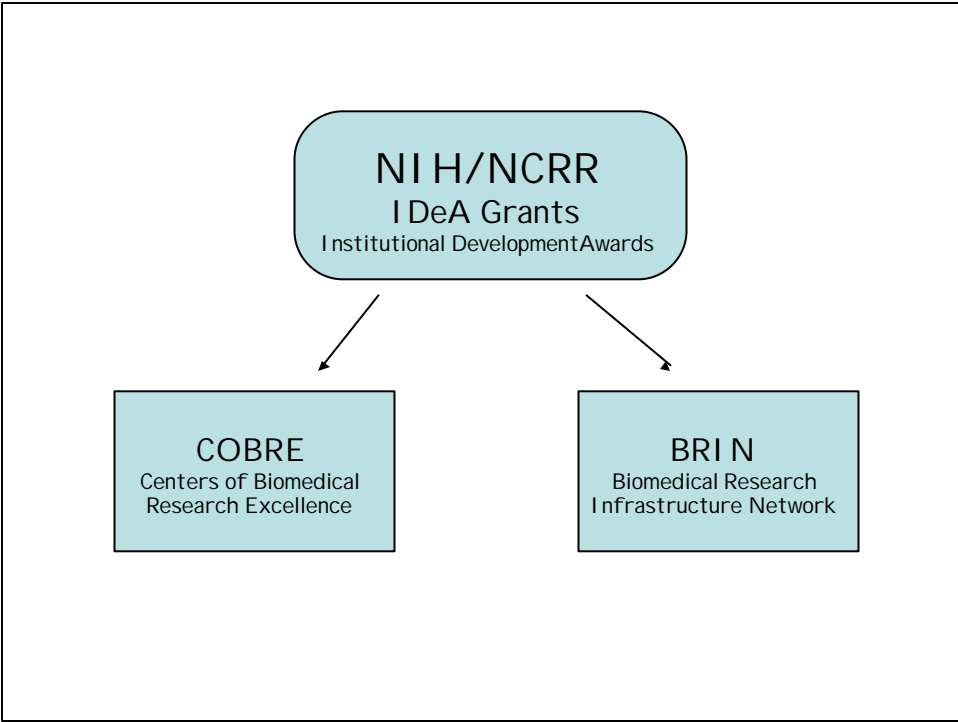



Wichita State University



KU School of Medicine



IDeA Grants in Kansas

- COBRE Center for Cancer Experimental Therapeutics**
 (2000) Gunda I. Georg, Ph.D., University of Kansas **\$10,000,000**
- Kansas Biomedical Research Infrastructure Network (K-BRI N)**
 (2001) Joan Hunt, Ph.D. University of Kansas School of Medicine **\$7,700,000**
- Novel Approaches for Control of Microbial Pathogens (COBRE)**
 (2001) Opendra Narayan, DVM, Ph.D., KU School of Medicine **\$10,800,000**
- COBRE Center in Protein Structure and Function**
 (2002) Robert P. Hanzlik, Ph.D., University of Kansas **\$10,200,000**
- COBRE Center in Epithelial Function in Health and Disease**
 (2002) Daniel C. Marcus, Ph.D., KSU School of Veterinary Medicine (2002) **\$10,800,000**

Total over 7 years: \$49.5M



NIH Goals for COBRE Programs:

- Focus on a single research area;
- Strengthen biomedical faculty research capability;
- Provide flexible support to build research capacity;
- Enhance research infrastructure;
- Encourage collaborative research *and research grant applications*;
- Foster health-related research.



COBRE Outcomes

NIH: Outcomes will be judged by

- number of new NIH grants (\$)
- number of investigators trained
- number of publications
- impact on local economy (SBI R, spin-offs, etc.)
- transition to self-sustaining center status



COBRE-PSF Goals:

- Basic research in protein structure-function;
- Faculty development and research-empowerment;
- Faculty and student recruitment and retention;
- Development of new research capabilities;
- Promote research collaboration (both intra- and extramural);
- Strengthen ties between Kansas Universities;
- Establish a Center for Structural Biology Research.



COBRE Center in Protein Structure and function

Components	Activities
<ul style="list-style-type: none">• Cores (3)• Projects (6)• Mentors (8)• Pilot Projects (4)• I AC• EAC	<ul style="list-style-type: none">• Monthly Center Meetings• Seminars• Workshops & Symposia• Faculty Recruiting• Laboratory renovations



COBRE Center in Protein Structure and function

COBRE Core Facilities

Core A: Administration

Robert P. Hanzlik, PI ; Mary Lou Michaelis, Co-I
Cynthia Beall, Linda Carlyle (Higuchi Biosciences Center)

Core B: Protein Structure Laboratory

Weijun Huang, Director

Core C: Protein Expression & Characterization

Michail Alterman, Director
Tatyana Duzhak, Boris Kornilaev



COBRE Center in Protein Structure and function

Related Core Facilities

KU Molecular Structures Group

MS, NMR, MGM, X-ray, BRSL, APL

High-Throughput Screening Lab

Combinatorial Chemistry - NIH CMLD Center 2003

Kg Laboratory for Chemical Synthesis



COBRE Center in Protein Structure and function

COBRE Projects and Investigators:

Brian Blagg, KU 2002-2005	Identification of Hsp90 Co-chaperones, Immunophilins and Client Proteins
Heather Desaire, KU George Bousfield, WSU 2002-2005	Structural Characterization of Glycoproteins using Mass Spectrometry.
Susan Egan, KU 2002-2005	Protein-Protein Interactions Required for Transcription Activation by RhaR
William Picking, KU 2002-2004 **	Subversion of Eukaryotic Cell Function by Shigella



COBRE Center in Protein Structure and function

COBRE Projects and Investigators:

Jeffrey Staudinger, KU 2002-2005	Crystallization of Pregnane X Receptor Splice Variants
Anna Zolkiewska, KSU 2002-2004 **	Structure and Function of the Cell Adhesion Domain of ADAM12
Emily Scott, KU 2004-2006	Structure-Function of Cytochrome P450 2A and 2E Enzymes
TBA 2004-2006	
TBA 2004-2006	



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COBRE Pilot Projects

David Eichhorn, WSU 2004-2006	Synthesis of Model Complexes for Nitrile Hydratase
Audrey Lamb, KU 2004-2006	Structural Analysis of Siderophore Biosynthesis
Bob Rowland, KSU-SVM 2004-2006	Structure and Function of Sars N Protein
Asma Zaidi, KU 2004-2006	Trafficking of the Plasmas Membrane Ca ²⁺ ATPase to Rafts



COBRE Center in Protein Structure and function

COBRE Internal Advisory Committee

Mary Lou Michaelis (KU, chair)

Gunda Georg (KU)

George Wilson (KU)

Michael Kanost (KSU)

James Calvet (KUMC)

William Hendry (WSU)



COBRE Center in Protein Structure and function

COBRE External Advisory Committee

Kathryn Ely, The Burnham Institute
Gary Gilliland, NI ST
Brian Matthews, University of Oregon
Carol Post, Purdue University
Steven Sprang, UT Southwestern



COBRE Center in Protein Structure and function

COBRE Workshops

4/03 Analyzing Protein Interactions: A Workshop (45)
7/03 From Cloning to Crystallization (75)
10/03 Stress Proteins and Chaperones in Medicine and
Biology (75)
4/04 Grant-writing Workshop (23)
10/04 Structural Biology Center Dedication (100?)



COBRE Center in Protein Structure and function

New Faculty Recruiting

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



COBRE Outcomes

NIH: Outcomes will be judged by

number of new NIH grants:	2 R01 + COBRE Supplement
number of investigators trained:	52 including 10 jr. faculty
number of publications:	15
impact on local economy :	1 potential patent (?)
transition to self-sustaining :	SBC building KEGA



COBRE Center in Protein Structure and function

New Developments

NIH Center in Combinatorial Methods and Library Development

- 2003, Jeffrey Aubé, PI, \$10M/5 years

New Structural Biology Center building

Extension of Structural Biology Center building ("Phase 3")

- 19,670 nsf, \$6M

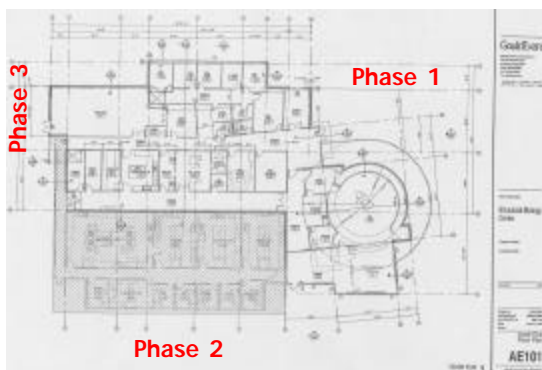
KU Tuition Enhancement Program (third of planned four years)

- Hiring of 100 new faculty members at KU-L (2002-07)
- Of those, 62 in the Biomedical Sciences

Kansas Economic Growth Act (KEGA)

- Adds Biosciences to Agriculture, Aviation, Oil and Gas

KU Structural Biology Center



Phase 1	9,250 f²
NMR	2,700
X-ray	1,650
Offices, conference	1,250
Bldg. Services	1,650
Phase 2	7,325 f²
COBRE Core C	600
BRSL	630
APL	1,910
Offices, conference	2,170
TOTAL	16,575 f²



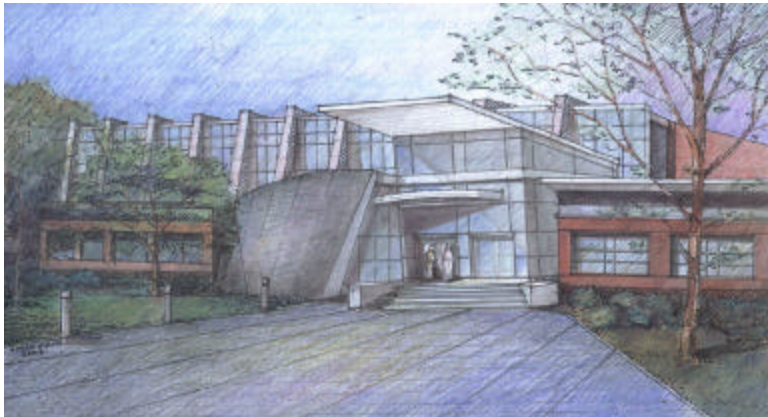
COBRE Center in Protein Structure and function



KU Structural Biology Center



COBRE Center in Protein Structure and function

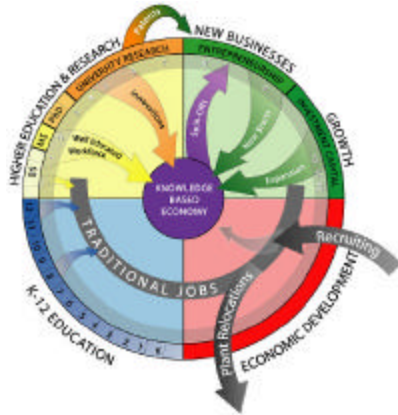


"Phase 3" (HTS and CMLD)



COBRE Center in Protein Structure and function

The Kansas Economic Growth Act (2004-14)



Kansas BioAuthority Board

- Entrepreneurship
Commercialization (\$86M)
Recruitment (\$27M)
- Biosciences
Research (\$185M)
Facilities (\$200M)
- 25 Eminent Scholars
- 35 Rising Stars

Program for today:

Overview and Project presentations

break

More project presentations

lunch break

Project presentations

break

One-on-One meetings, Poster Session

adjourn

EAB: Tour of SBC and HTS

Program for Friday:
(8:00 am, 2049 and 2055 Malott Hall)

Core Lab Presentations

Tour of PSL (3042 Haworth)

break in room 2055 Malott

EAC Executive Session (room 2055)

Wrap-up Session (room 2055)

adjourn, catch shuttles



**COBRE Center in
Protein Structure and function**

