



Welcome

Sixth COBRE Symposium on Protein Structure and Function

University of Kansas - Lawrence

September 24, 2009

The Symposium

Today's academic conference of distinguished intellectuals debating highly specialized topics began with the ancient Greek wine-drinking party, where exclusively male participants socialized, exchanged news and pondered life's great questions.

The Art Institute of Chicago



The COBRE Mission

- Faculty and student recruitment and retention;
- Faculty development and research-empowerment;
- Development of new research capabilities.

- Promote research collaboration (both intra- and extramural);
- Strengthen ties between Kansas Universities.

- Perform high quality, health-related basic research in protein structure-function;
- Establish a Center for Structural Biology Research.



COBRE Funding (2008-13)

NIH-RR-017708	\$10,125,318
KTEC, Deans & Chairs, KUCR	1,000,000
NIH-RR-017708-07S1	412,966
Total	\$11,538,284

Grants received by current COBRE investigators:

2 R03, 1 R21, 1 NSF, 2 Foundation **\$1,151,079**



COBRE Investigators

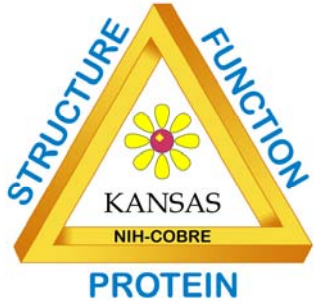
Research Project Leaders (4)	Pilot Project Leaders (4)
James Bann, WSU	Roberto De Guzman, KU
Chris Fischer, KU	Liang Tang, KU
Scott Hefty, KU	Wonpil Im, KU
Todd Holyoak, KUMC	Mario Rivera, KU (<i>graduated</i>)
	Kandatege Wimalasena, WSU



New Replacement Pilot Project

Kandatege Wimalasena, WSU, "Structure-Activity Studies of Dopamine beta-Monooxygenase"

Mario Rivera, KU, Received NSF research grant to expand his COBRE Pilot Project "Heme transfer between hemoglobin and Pseudomonas protein HasAp."



COBRE-PSF News

1. ARRA Supplement
2. Workshops
3. Major Instrumentation Upgrades
4. Core Lab Activities & Finances



ARRA Supplement

\$412,966 for 2009-2011 to add three new Pilot Projects to COBRE-PSF:

John Karanicolas, KU, "Towards Novel Inhibitors of OX40L-OX40: A Dominant Negative Approach"

Kristin Michel, KSU, "Structure and Target Protease of Anopheles SRPN6, an Inhibitor of Malaria Parasite"

Alex Moise, KU, "Structural Characterization of Lecithin:Retinol Acyltransferase"



COBRE Workshops

Spring 2008 - COBRE Grant-Writing Workshop

Nine participants, all completed program

Submitted 7 (8?) R01s and 1 Challenge application

Fall 2009 - GRASP NMR Regional Meeting

Jen Laurence et al., organizers

Spring 2009 - options are still open

Seeking suggestions, requests, volunteers



Major Instrumentation: X-ray

- Kristin Bowman-James, Victor Day and others
- "Acquisition of a Multipurpose X-Ray Diffractometer giving Unique Single-Crystal Structural Capabilities to the Midwest Region."
- NSF-MRI Application **FUNDED August 2009**
- High-brilliance, microfocus, Cu rotating anode generator with CCD detector
- Suitable for **small crystals** of small molecules and **proteins**
- COBRE-PSF will contribute toward purchase and gain access
- Will be located in the SBC



Major Instrumentation: NMR

- Bob Hanzlik, Justin Douglas and others
- "Strengthening Pharmaceutical Research at the University of Kansas."
- Congressional earmark pending (\$427,500)
- New console and electronics to convert 10 year old Varian Inova 600 MHz NMR to a Bruker Avance III instrument
- 5 mm RT-TXI probe (3-channel, maybe 4?)
- 1.7 mm microprobe



Core Lab Activities

Protein Purification Group (Core B)

Hired new staff scientist (Dr. Na Zhang, coming October 1st)
Extensively upgraded FPLC capabilities
Established insect cell culture system for protein expression
Set up special lab for insect cell work

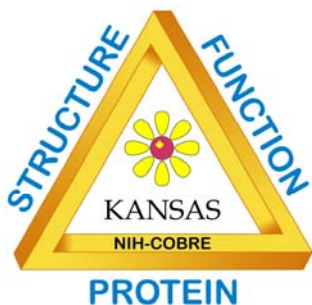
Protein Structure Lab (Core C)

Extensive maintenance on generator/detector mid-year
New documentation camera/computer set up

Bio-NMR Lab (Core D)

Extensive maintenance on cryoprobe for 800
Implemented new methods for protein dynamics

Overall: More than 70 projects for 37 research groups at 9 institutions completed or in progress.



Core Lab Finances

Grant year 06 (partial) and 07 (past 5 months)

COBRE Phase I: Give money to Investigators to spend in Core Labs.

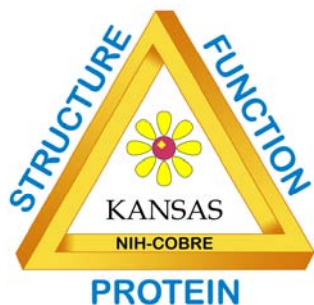
COBRE Phase II: Put resources in Core Labs to give out as Coupons.

	Year 06 (startup)	Year 07 (5 months)	Year 07 (12 months)
University subsidy to Core Labs	\$0	\$0	\$0
COBRE funds to Core Labs (PPG + PSL + BNMR = 5.2 FTE)	\$305,000 (actually spent)		\$458,220 (budgeted)
Value of deliverables (37 Clients) (Lab fees and Staff time)	\$85,400	\$131,200	\$314,880 (extrapolated)
Coupons awarded (36 Clients) (Lab fees and Staff time)	\$63,700	\$94,143	



Summary & Conclusions

- 11 Tenure-track faculty investigators and 11 Research or Pilot projects.
- 3 Core Labs and 5.2 FTE Professional Staff; all are functioning well.
- Many external clients and/or collaborators.
- Healthy cashflow through core labs; making progress toward partial self-sustainability.



Acknowledgements

NIH-NCRR

Deans (CLAS, Pharmacy)

Chairs (MDCM, PHCH, P&TX, MOBI, CHEM)

KU Center for Research, Inc.

External Advisory Board Members

COBRE Mentors and Investigators

Core Lab Staff and Steering Committee Members

Higuchi Biosciences Center Staff Members

Linda Carlye, Nicole Suchy

Mary Lou Michaelis

Cynthia Beall