



January 13-14, 2020

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**SC COBRE  
IN OXIDANTS,  
REDOX BALANCE,  
AND STRESS SIGNALING**

## COBRE EXECUTIVE ADVISORY BOARD



**Kenneth D. Tew, PhD, DSc**

Medical University of South Carolina



**Franklin G. Berger, PhD**

University of South Carolina



**Yvonne Janssen-Heininger, PhD**

The University of Vermont



**Dean P. Jones, PhD**

Emory University of Medicine



**Garth Powis, D. Phil**

Sanford Burnham Prebys Medical Discovery Institute



**Peter J. van Bladeren, PhD**

Nestlé: Retired Vice President of Regulatory & Scientific Affairs

# ABOUT COBRE

We are about approaching the end of the Phase II funding period and the COBRE program is now incorporating the adaptive changes that will be required for transition into the third stage of its development. For this last year, we brought together junior investigators from disparate backgrounds with shared research interests and expertise in oxidants, redox balance and stress signaling at the Medical University of South Carolina. To facilitate development of the Center during the period of 2012-2020, we have supported four individuals and maintained four scientific core facilities. Updating and consolidating the core infrastructure is a prerequisite for developing a viable Phase III application that encompasses a reduced budget and focuses attention on strong and unique components of our core facilities to support a Center structure. Our plan continues to be to develop in South Carolina a Center of Excellence in the scientific discipline of redox biology.

Existing infrastructure has continued to provide a successful mentoring environment for target faculty members with research interests that span a number of human pathologies. RO1 successes from recent graduates continue to encourage the present trainee investigators with interests in cancer (Wang, G. & Wang, J.), cardiovascular disease (Angel), liver disease (Kim) and kinase/phosphatase biochemistry (Ahuja) . Each of these projects interfaces with the fundamentals of oxidant stress, redox homeostasis and stress signaling and enhances programmatic development of the Center. Their projects are substantially supported by four scientific cores in Proteomics, Bioenergetics, Cell and Molecular Imaging and Analytical Redox. Our central hypothesis has not changed and continues to be that redox regulated pathways impact significantly on the pathobiology of diseases such as cancer, aging, diabetes, inflammation and neurodegeneration. Our efforts have been enhanced by recruitment of a new junior investigator and faculty member Dr. Lalima Ahuja into the Department of Pharmacology in the fourth quarter of 2019.

The administrative core continues to provide business management, faculty development, mentoring, pilot project assessments, program planning and sustainability. We have appointed oversight committees to include Steering, Internal Advisors and External Advisors. Our advisory groups contain individuals who have broad scientific expertise in chosen disciplines and also considerable mentoring experience. Future development of the program at MUSC is also presently served by existing financial commitments from the Deans of Medicine and Pharmacy and the Provost's Office. As we move forward with additional recruitments and supplementation of our core facilities, our ultimate goals continue to include attainment of peer review support for trainee faculty and continued enhancement of the capabilities of the core facilities. We are now accumulating the metrics to support our success as we put together a Phase III submission to be reviewed by NIGMS study section in the Spring of 2020.

# Monday 1/13

**9:00 – 9:05 AM** **Kenneth Tew, PhD, DSC**  
COBRE PI, *Opening Remarks*

**9:05 – 10:35 AM**



**Lauren Ball, PhD**  
Director, Proteomics Core

**10:35 – 10:45 AM**

*Break*

**10:45 – 12:15 PM**



**Danyelle Townsend, PhD**  
Director, Analytical Redox Biology  
Core

**12:15 – 1:00 PM**

*Working lunch:*

**Kenneth Tew, PhD, DSC;**  
**Deza Finn, Business Administrator**  
Overall, Administrative Core, & Pilot  
Program

*Monday 1/13*

**1:00 – 2:30 PM**



**John Lemasters, MD, PhD**

Director, Cell and Molecular Imaging  
Core

**2:30 – 3:15 PM**



**Peggi Angel, PhD**

COBRE Faculty

*“Systems-based Analysis of Redox Activity in  
Aortic Valve Stenosis”*

**3:15 – 3:30 PM**

*Break*

**3:30 – 4:15 PM**



**Haizhen Wang, PhD**

COBRE Faculty

*“Targeting CDK6 for T-cell Acute  
Lymphoblastic Leukemia (T-ALL) Therapy”*

*Monday 1/13*

**4:15 – 5:00 PM**



**Lalima G Ahuja, PhD**

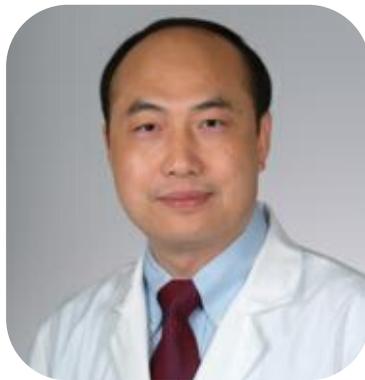
COBRE Faculty

*“Exploring conformational allostery of Protein Kinases in Cancer”*

**5:00 – 5:30 PM** EAB & Core Directors stay for closed session  
*(all others free to leave)*

*Tuesday 1/14*

9:00 – 9:45 AM



**Gavin Wang, MD, PhD**  
COBRE Faculty

*“The Response of Cancer Stem Cells to Oxidative Stress”*

9:45 – 10:30 AM



**Seok-Hyung Kim, PhD**  
COBRE Faculty

*“Mitochondrial Disease Associated Mutations as Novel Genetic Risk Factors to Develop Advanced Fatty Liver Disease”*

10:30 – 10:45 AM

*Break*

10:45 – 11:15 AM



**Shikhar Mehrotra, PhD**  
Pilot Award Grantee

*“Targeting Anti-oxidant Capacity of T Cells for Immunotherapy”*

*Tuesday 1/14*



**11:15 – 11:45 AM**



**Jessica Thaxton, PhD**

Pilot Award Grantee

*“Tumor Induced Dysfunction of T Cell Metabolism Through Endoplasmic Reticulum Oxidoreductase 1 Alpha”*

**11:45 – 12:15 PM**



**Kyu-Ho Lee, PhD**

Pilot Award Grantee

*“A Novel Role for Iron Sulphur Cluster Metabolism in Cardiac Development”*

**12:15 – 1:00 PM**

*Lunch break*

**1:00 – 2:00 PM**

Executive Board Closing Meeting  
*(all others free to leave)*

# NOTES

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# NOTES

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# SC COBRE EAB Retreat 2020

Thank you  
for  
joining us

## COBRE Administrative Core



**Deza Finn**  
Administrative  
Manager



**Carly Lauer**  
Grants  
Coordinator



**Caitlin Myers**  
Administrative  
Coordinator