

SFRBM/SFRRI 2010 • Oral Presentation Schedule • Orlando, FL

DAY 1: THURSDAY, NOVEMBER 18, 2010

SESSION 1 **NADPH Oxidases & NO in Cardiovascular Biology**

TIME	AFFILIATION	ABSTRACT TITLE
2:30 pm - 2:50 pm	Siobhan Craige	University of Massachusetts
2:50 pm - 3:10 pm	Livia Camargo	University of São Paulo - Brazil
3:10 pm - 3:30 pm	Katrin Schröder	University of Frankfurt - Germany
3:30 pm - 3:50 pm	Betsy Dokken	University of Arizona
3:50 pm - 4:10 pm	Sergey Dikalov	Emory University
4:10 pm - 4:30 pm	David Jourdeuil	Albany Medical College

NADPH oxidase 4 promotes endothelial angiogenesis  
 Protein Disulfide Isomerase regulation of NADPH oxidase activity: effects on Angiotensin II redox signaling in hypertension  
 The H2O2-producing NADPH oxidase Nox4 protects against Angiotensin II induced vascular hypertrophy and inflammation  
 Glucagon-like peptide-1 enhances nitric oxide production by coronary endothelial cells and improves endothelium-dependent coronary microvascular function after cardiac arrest and resuscitation  
 Role of Nox2-induced reverse electron transfer in production of mitochondrial reactive oxygen species, endothelial dysfunction and hypertension  
 Upregulation and Mechanisms of Action of the Nitric Oxide Dioxygenase Cytoglobin in Vascular Smooth Muscle in Restenosis after Carotid Injury

SESSION 2 **Novel Aspects of Reactive Species in Diabetes, Obesity and Metabolism**

TIME	AFFILIATION	ABSTRACT TITLE
2:30 pm - 2:50 pm	Xinghua Cheng	King's College London - UK
2:50 pm - 3:10 pm	Colin Reilly	University of Alabama at Birmingham
3:10 pm - 3:30 pm	Adam Salmon	University of Texas HSC - San Antonio
3:30 pm - 3:50 pm	Dario Ramirez	Oklahoma Medical Research Foundation
3:50 pm - 4:10 pm	Jimbo Liu	Cleveland Clinic Foundation
4:10 pm - 4:30 pm	Preeti Purwaha	North Dakota State University

Impaired Nrf2/ARE antioxidant signaling in human fetal endothelial cells from gestational diabetic pregnancies: a potential phenotypic change leads to type 2 diabetes mellitus?  
 Mitochondrial targeted antioxidant MitoQ modulates Smad2/3 and  $\beta$ -catenin signaling pathways in the prevention of diabetes induced kidney damage  
 Obesity-induced insulin resistance is regulated by methionine sulfoxide reductase  
 MYELOPEROXIDASE-INDUCED FAT INFLAMMATION IN OBESITY  
 Circulating Platelet-activating Factor is Primarily Cleared by Transport, not Intravascular Hydrolysis by Lipoprotein-associated Phospholipase A2/PAF Acetylhydrolase  
 Severe liver pathology caused by dietary omega-6 PUFA in Alcoholic Liver Disease may be associated with COX-2 mediated lipid peroxidation and TNF- mediated pathways

SESSION 3 **Redox Signaling in Pulmonary Disease**

TIME	AFFILIATION	ABSTRACT TITLE
2:30 pm - 2:50 pm	Saurabh Aggarwal	Medical College of Georgia
2:50 pm - 3:10 pm	Sandra Gomez-Mejia	Oklahoma Medical Research Foundation
3:10 pm - 3:30 pm	Olga Rafikova	Medical College of Georgia
3:30 pm - 3:50 pm	Irfan Rahman	University of Rochester
3:50 pm - 4:10 pm	Chao He	The University of Iowa
4:10 pm - 4:30 pm	Samantha Yeligar	Emory University

The Rebound Pulmonary Hypertension associated with the Acute Withdrawal of Inhaled Nitric Oxide involves the Nitration-Mediated Inhibition of Protein Kinase G: Protective Role of Superoxide Dismutase  
 TRAPPING OF PROTEIN-CENTERED RADICALS WITH A NITRONE SPIN TRAP PREVENTS ENDOTOXIN-INDUCED EXPERIMENTAL ACUTE RESPIRATORY DISTRESS SYNDROME MOUSE MODEL  
 Ligand independent up-regulation of EGFR signaling is responsible for eNOS dysfunction in pulmonary hypertension  
 FoxO3 deficiency augments lung inflammation by downregulating antioxidant genes leading to pulmonary emphysema by cigarette smoke in mice  
 Cu,Zn-SOD-induced H2O2 mediates pulmonary fibrosis via down-regulation of ERK  
 Glutathione reduces alcohol-induced oxidative stress via downregulation of NADPH oxidases and TGF 1 in mouse alveolar macrophages.

SESSION 4 **Redox Signaling and Therapy in Cancer**

TIME	AFFILIATION	ABSTRACT TITLE
2:30 pm - 2:50 pm	Thomas van 't Erve	University of Iowa
2:50 pm - 3:10 pm	Karsten Gulow	German Cancer Research Center - Germany
3:10 pm - 3:30 pm	Xi Huang	New York University
3:30 pm - 3:50 pm	Andreas Simons	The University of Iowa
3:50 pm - 4:10 pm	Nadine Hempel	Albany Medical College
4:10 pm - 4:30 pm	Govindasamy Ilangovan	The Ohio State University

Predicting Cell Vulnerability to Hydrogen Peroxide Generating Compounds: Possible Use in Anti-Cancer Therapies  
 Inhibition of constitutively activated NF- $\kappa$ B induces ROS- dependent cell death in T cell lymphoma  
 Effects of iron deficiency anemia on the formation of vascular endothelial growth factor, angiogenesis, and metastasis  
 Inhibition of EGFR Signaling Induces Metabolic Oxidative Stress in Human Head and Neck Cancer Cells  
 Redox Regulation of Tumor Cell Migration via p130cas  
 HSF-1 knock out protects the heart from Doxorubicin by enhancing NF- $\kappa$ B transactivation

DAY 2: FRIDAY, NOVEMBER 19, 2010

SESSION 5 **Mitochondrial Superoxide and Superoxide Dismutase**

TIME	AFFILIATION	ABSTRACT TITLE
2:30 pm - 2:50 pm	Leena Chaudhuri	The University of Iowa
2:50 pm - 3:10 pm	Anthony Cyr	University of Iowa
3:10 pm - 3:30 pm	Vasudevan Bakthavachalu	University of Kentucky
3:30 pm - 3:50 pm	Adam Case	The University of Iowa
3:50 pm - 4:10 pm	Ehab Sarsour	The University of Iowa
4:10 pm - 4:30 pm	Aaron Holley	University of Kentucky

Manganese superoxide dismutase (SOD2) 3'-untranslated region: a novel molecular sensor for environmental stress  
 Conditional Knockout of Sod2 in Murine Hepatocytes Disrupts Epigenetic Control of Gene Expression  
 Manganese superoxide dismutase protects pol against UV induced inactivation: Implication for DNA repair  
 A Novel Role for Mitochondrial Superoxide in the Development of Erythropoietic Protoporphyrin  
 An inverse correlation between manganese superoxide dismutase activity and glucose consumption: MnSOD, a new molecular player for the Warburg effect  
 Mechanisms of Manganese Superoxide Dismutase-Mediated Inside-Out Signaling in SKH-1 Hairless Mouse Skin.

SESSION 6 **Nitric Oxide, Nitrite & Blood Vessels**

TIME	AFFILIATION	ABSTRACT TITLE
2:30 pm - 2:50 pm	Jason Hickok	University of Illinois - Chicago
2:50 pm - 3:10 pm	Nadiezhdha Cantu-Medellin	University of Alabama at Birmingham
3:10 pm - 3:30 pm	Vasanthha Madhuri Kallakunta	University of Windsor - Canada
3:30 pm - 3:50 pm	Miriam Cortese-Krott	University of Dusseldorf - Germany
3:50 pm - 4:10 pm	Christopher Pattillo	LSU Health Sciences Center
4:10 pm - 4:30 pm	Li Mo	University of Pittsburgh

Cellular quantification and kinetic analysis of dinitrosyliron complexes  
 Effects of T-state and R-state stabilization on deoxyhemoglobin-nitrite reactions and stimulation of nitric oxide (NO) signaling  
 Protein disulfide isomerase-mediated oxygen and nitrite dependent efflux of NO-equivalents from red blood cells  
 Isolation, characterization, and activity of an endothelial nitric oxide synthase in human red blood cells  
 Sodium Nitrite Therapy Positively Augments Arteriogenesis as Monitored over Time with Serial Angiography in a Murine Model of Hind Limb Ischemia  
 NITRITE STIMULATES MITOCHONDRIAL BIOGENESIS IN HYPOXIA

SESSION 7 **Neuroinflammation and Neuronal Injury**

TIME	AFFILIATION	ABSTRACT TITLE
2:30 pm - 2:50 pm	Anumantha Kanthasamy	Iowa State University
2:50 pm - 3:10 pm	Qing Lu	Medical College of Georgia
3:10 pm - 3:30 pm	Irene Kuipers	Maastricht University - Netherlands
3:30 pm - 3:50 pm	Humberto Rodriguez-Rocha	University of Nebraska
3:50 pm - 4:10 pm	Erin Rosenbaum	University of Nebraska
4:10 pm - 4:30 pm	Howard Elford	Molecules for Health, Inc.

Novel NOX2 Inhibitor Suppresses Neuroinflammation in Experimental Models of Parkinson's Disease: A New Translational Strategy in Neuroprotection  
 Increased NADPH Oxidase Derived Superoxide is Involved in Hypoxia Ischemic Neuronal Cell Death in Neonatal Hippocampal Slice Cultures  
 Activation of the Glutaredoxin-1 gene by Nuclear Factor kappa B provides feed forward enhancement of signaling  
 Glutaredoxins regulate neuronal cell death associated with Parkinson's Disease  
 NANOFORMULATED COPPER/ZINC SUPEROXIDE DISMUTASE INCREASES NEURONAL UPTAKE VIA ACTIVE ENDOCYTOSIS  
 A Unique Polyphenol Free Free Radical Scavenger Dioxid's Ability to Treat Multiple Sclerosis

**SESSION 8** **Transcriptional Regulation of Antioxidants in Aging & Disease**

Chairs:

TIME	AFFILIATION	ABSTRACT TITLE	
2:30 pm - 2:50 pm	Roland Stocker	The University of Sydney - Australia	HEME OXYGENASE-1 AFFORDS CELLULAR ANTIOXIDANT PROTECTION VIA THE TRANSCRIPTIONAL REGULATION OF KNOWN ANTIOXIDANT GENES
2:50 pm - 3:10 pm	Anuli Anyanwu	University of Michigan	Heme oxygenase-1/carbon monoxide protects against pulmonary injury in a neonatal murine model of hyperoxia-induced lung injury
3:10 pm - 3:30 pm	Fuzhong Qin	Boston University	Myocyte-Specific Catalase Overexpression Prevents Age-Related Left Ventricular Diastolic Dysfunction: Relationship to Myocyte Dysfunction and SERCA Inactivation
3:30 pm - 3:50 pm	Rajasekaran Soorappan	University of Utah	Nrf2 Deficiency Impairs ARE-Dependent Cardiac Antioxidant Mechanisms in Aged Mice
3:50 pm - 4:10 pm	Yuji Ikeno	University of Texas HSC - San Antonio	DO THIOREDOXIN 2 TRANSGENIC AND THIOREDOXIN 1 KNOCKOUT MICE EXTEND LIFESPAN THROUGH DIFFERENT MECHANISMS?
4:10 pm - 4:30 pm	Wei-Jian Zhang	Oregon State University	Genetic and pharmacologic modulation of thioredoxin and glutathione systems alters lipopolysaccharide-induced acute liver inflammatory responses by affecting NFkB and Nrf2 pathways in mice

**DAY 3: SATURDAY, NOVEMBER 20, 2010****SESSION 9** **Biological Regulation of Macromolecule Redox State**

Chairs:

TIME	AFFILIATION	ABSTRACT TITLE	
2:30 pm - 2:50 pm	José Renato Cussiol	University of São Paulo - Brazil	Ohr (Organic hydroperoxide resistance protein) possesses a previously undescribed activity: Lipoyl-dependent peroxidase.
2:50 pm - 3:10 pm	Dario Vitturi	University of Alabama at Birmingham	Role of the hemoglobin beta93Cys as an antioxidant in the vascular compartment: Implications for vascular homeostasis during endotoxemia
3:10 pm - 3:30 pm	Alison Brewer	King's College London - UK	Regulation of the Nrf2 antioxidant pathway by NOX4 in the postnatal heart.
3:30 pm - 3:50 pm	Saurabh Chatterjee	NIHES	P2X7 receptor-mediated free radical production by leptin is key to Kupffer cell activation and MHC Class II expression in worsening steatohepatitis of obesity
3:50 pm - 4:10 pm	Andres Trostchansky	University of the Republic - Uruguay	Novel anti-inflammatory actions of nitroarachidonic acid: Down-regulation of NADPH oxidase in activated macrophages
4:10 pm - 4:30 pm	Sumitra Miriyala	University of Kentucky	4-hydroxy-2-nonenol mediates AIFm2 release from mitochondria: An insight into the mechanism of oxidative stress mediated retrograde signaling

**SESSION 10** **Novel Detection and Reaction Mechanisms in Free Radical Biology**

Chairs:

TIME	AFFILIATION	ABSTRACT TITLE	
2:30 pm - 2:50 pm	Masahiro Abo	University of Tokyo - Japan	Development of a Fluorescence Probe for Hydrogen Peroxide
2:50 pm - 3:10 pm	Steven Bottle	Queensland Univ. of Technology - Australia	Developing Nitroxides to Probe for Free Radicals, ROS and the Redox Status of Cells
3:10 pm - 3:30 pm	Mikiel Tanaka	Oklahoma University	Identification of selectively damaged mRNA in response to oxidative stress: Characterization of abasic sites using an Aldehyde Reactive Probe
3:30 pm - 3:50 pm	Satoshi Matsuzaki	Oklahoma Medical Research Foundation	Identification of carbon-centered radical formation from mitochondrial electron transport chain by EPR-spin trapping techniques
3:50 pm - 4:10 pm	Zili Zhai	Oklahoma Medical Research Foundation	FREE RADICAL MECHANISM OF MYELOPEROXIDASE-INDUCED GAPDH OXIDATION, AGGREGATION AND PROTEOTOXIC STRESS IN ACTIVATED MACROPHAGES
4:10 pm - 4:30 pm	Page Spiess	University of Vermont	Global proteomics analysis of acrolein adducts in human airway epithelial cells in vitro

**SESSION 11** **Novel Therapeutics: Beyond Antioxidants**

Chairs:

TIME	AFFILIATION	ABSTRACT TITLE	
2:30 pm - 2:50 pm	Pedro Cabrales	University of California - San Diego	Sustained release nitric oxide from long lived circulating nanoparticles
2:50 pm - 3:10 pm	Georg Wondrak	University of Arizona	Switching enemies: The redox antimalarial dihydroartemisinin targets human metastatic melanoma cells but not primary melanocytes through induction of NOXA-dependent apoptosis
3:10 pm - 3:30 pm	Timothy Fiewelen	Medical College of Wisconsin	hE-Hb-B10, a Hemoglobin Binding Peptide for Potential use in Hemolytic Pathologies
3:30 pm - 3:50 pm	Bashir Rezk	Tulane University	Homocysteine reduces sperm motility via elevation of mitochondrial superoxide anions in normal and subfertile subjects: Potential effect of co-treatment with folic acid.
3:50 pm - 4:10 pm	Reshma Bhowmick	Medical College of Wisconsin	SIGNALING EVENTS ASSOCIATED WITH UPREGULATION OF CYTOPROTECTIVE iNOS IN A CELLULAR MODEL OF PHOTODYNAMIC THERAPY
4:10 pm - 4:30 pm	Ellen Robb	Brock University - Canada	Phytoestrogens, including resveratrol, interact with estrogen receptor beta to inhibit cell replicative growth and enhance stress resistance by upregulating mitochondrial superoxide dismutase

**SESSION 12** **Enzymology of Oxidases, Peroxidases & Synthases**

Chairs:

TIME	AFFILIATION	ABSTRACT TITLE	
2:30 pm - 2:50 pm	Jun Wang	University of Pittsburgh	Novel Function of Sulfite Oxidase as a Nitrite Reductase that Generates Nitric Oxide
2:50 pm - 3:10 pm	Kalina Rangelova	NIHES	Formation of Highly Reactive Sulfite-Derived Free Radicals by the Activation of Human Neutrophils
3:10 pm - 3:30 pm	Ruslan Rafikov	Medical College of Georgia	Basic amino acid residues within (aa105-125) eNOS region are responsible for the "flexible arm" movement and the inhibition of ZnS4 mutants
3:30 pm - 3:50 pm	Luciana Hannibal	Cleveland Clinic Foundation	Role of a proximal Trp residue in catalysis by bacterial and mammalian NOS: differences and similarities
3:50 pm - 4:10 pm	Jennifer Streeter	University of Iowa	The majority of Nox1 resides at internal membranes and traffics differentially with stimulation
4:10 pm - 4:30 pm	Young Jang	Harvard University	Calorie Restriction (CR) protects against oxidative stress-induced muscle atrophy by preserving mitochondrial function and muscle integrity even in the absence of antioxidant enzyme CuZnSOD