

SUBMITTED BY:

**STEPHEN M. LANIER, PH.D.
VICE PRESIDENT FOR RESEARCH**

**RESEARCH AWARDS OVER \$500,000
QUARTERS 3 AND 4 – FY 2015**

SCHOOL OF MEDICINE

Department of Biochemistry

Principal Investigator: Chunying Li, assistant professor

Sponsor: National Heart, Lung and Blood Institute

Title: Chemokine Signaling in EPC Angiogenesis: A Role of Lysine Methylation

Anticipated Total: \$ 1,914,122

Effective Dates: 7/1/2015 – 4/30/2020

Description: This grant aims to provide valuable information and potential therapeutic targets for enhancing endothelial progenitor cells (EPCs)-based cell therapy for certain vascular diseases, as well as advance the field of chemokine receptor biology.

Center for Molecular Medicine & Genetics

Principal Investigator: James Granneman, professor

Sponsor: National Institute of Diabetes, Digestive and Kidney Diseases

Title: Preclinical Validation of ABHD5 as a Target for Treatment of Obesity

Anticipated Total: \$ 2,724,892

Effective Dates: 7/1/2015 – 6/30/2019

Description: This project will determine whether a novel means of activating brown and white adipocyte fat oxidation has therapeutic benefit in preclinical models of obesity and adult-onset diabetes. The long-term goal is provide preclinical validation for novel targets for treating obesity-related disorders, and generate candidate compounds for clinical development.

Emergency Medicine

Principal Investigator: Vijaya Arun Kumar, assistant professor

Sponsor: Siemens Healthcare Diagnostics Inc.

Title: Specimen Collection in the Emergency Department for The Assessment of Clinical Performance of Troponin Assays

Anticipated Total: \$583,900

Effective Dates: 4/7/2015 – 1/23/2016

Internal Medicine

Principal Investigator: Keith Kaye, professor

Sponsor: National Institute for Allergy and Infectious Diseases

Title: Optimizing Clinical Use of Polymyxin B: Teaching an Old Drug to Treat Superbugs

Anticipated Total: \$ 4,884,667

Effective Dates: 6/19/2015 – 5/31/2020

Description: The study will focus on Gram-negative bacteria resistant to all other antibiotics except polymyxin B. It will provide urgently needed information to guide clinicians in the proper intravenous dosing of polymyxin B in critically-ill patients.

Obstetrics and Gynecology

Principal Investigator: Sascha Drewlo, assistant professor

Sponsor: National Heart, Lung and Blood Institute

Title: The Role of PPAR γ in Human Placental Development and Preeclampsia

Anticipated Total: \$ 1,920,938

Effective Dates: 7/1/2015 – 3/31/2020

Description: The project will research the effectiveness of the drug rosiglitazone, sold as the diabetic medication Avandia, in stimulating a placental signaling channel to halt severe preeclampsia.

Oncology

Principal Investigator: Elisabeth Heath, professor

Sponsor: U.S. Department of Defense

Title: The Prostate Cancer Clinical Trials Consortium: Clinical Research Site Application

Anticipated Total: \$904,481

Effective Dates: 4/15/2015 – 4/14/2018

Description: This grant will provide support for the development of a prostate cancer biorepository consortium that will facilitate the collection, processing, annotation, storage, and distribution of high-quality human prostate cancer biospecimens through a collaborative network across multiple institutions. The award is designed to support a biorepository that will enable the prostate cancer research community to address multiple areas of research such as biomarkers, therapy, genetics, and tumor biology to move toward the PCRP vision of conquering prostate cancer.

Principal Investigator: Paul Swerdlow, professor

Sponsor: Biogen IDEC, Inc.

Title: A Study of Noninvasive Methodologies to Measure Blood Flow and Oxygenation as Potential Biomarkers in Adult Sickle Cell Disease Patients

Anticipated Total: \$ 1,107,324

Effective Dates: 3/15/2015 – 2/28/2016

Pathology

Principal Investigator: Rafael Fridman, professor

Sponsor: U.S. Army Medical Research Acquisition

Title: Targeting Discoidin Domain Receptors in Prostate Cancer

Anticipated Total: \$574,375

Effective Dates: 8/1/2015 – 7/31/2018

Pediatrics

Principal Investigator: Angulique Outlaw, associate professor

Sponsor: National Institute of Mental Health

Title: Motivational Enhancement System for Adherence (MESA) for Youth Starting ART

Anticipated Total: \$2,813,111

Effective Dates: 8/1/2015 – 4/30/2020

Description: This project will focus on youth living with HIV. They show significant adherence difficulties resulting in poor health outcomes as well as increased likelihood of transmission of the disease. This grant will develop an adherence intervention by targeting adherence issues before they

begin, ultimately aiming to improve the individual health of these youth, and also affect public health by reduced transmission when viral loads are improved and reduced likelihood of transmitting resistant strains of virus.

Psychiatry

Principal Investigator: Sandra Jacobson, professor

Sponsor: National Institute on Alcohol Abuse and Alcoholism

Title: MicroRNAs as Biomarkers of Exposure and Effect in Fetal Alcohol Spectrum Disorders

Anticipated Total: \$507,720

Effective Dates: 6/1/2015 – 5/31/2017

Description: Despite four decades of research on fetal alcohol spectrum disorders (FASD), maternal alcohol consumption during pregnancy continues to be a major worldwide public health problem in the U.S. and around the globe, and diagnosis of FASD during infancy, when early interventions can be most effective, remains difficult. There is, therefore, a strong, currently unmet need for biologic tests that can be easily performed in infancy to identify which children were prenatally exposed to alcohol and which of these children will go on to exhibit adverse effects on cognitive and behavioral function and growth. Based on new evidence from a sheep model, Dr. Jacobson's team plans to identify patterns of circulating microRNAs in the infant's blood that can be used as tests in clinical practice to meet this need and that may advance our understanding of how prenatal alcohol exposure harms the fetus, ultimately leading to development of novel therapies.

Center for Urban, Labor & Metropolitan Affairs

Principal Investigator: Thomas Lyke Thompson, director

Sponsor: State of Michigan Department of Health and Human Services

Title: Detroit Youth Service and Mentoring

Anticipated Total: \$ 554,976

Effective Dates: 6/1/2015 – 9/30/2016

EUGENE APPLEBAUM COLLEGE OF PHARMACY & HEALTH SCIENCES

Pharmacy Practice

Principal Investigator: Paul Kilgore, associate professor

Sponsor: Merck Pharmaceutical Company

Title: Vaccine Uptake Among Adults: Interventions and Evaluation in a Large Health System

Anticipated Total: \$796,086

Effective Dates: 7/6/2015 – 6/1/2017

COLLEGE OF NURSING

Dean's Office Nursing

Principal Investigator: Sandra Oliver-McNeil, assistant professor

Sponsor: Health Resources & Services Administration

Title: Nurse Education, Practice, Quality and Retention-Veterans' Bachelor of Science in Nursing Program

Anticipated Total: \$ 1,018,740

Effective Dates: 7/1/2015 – 6/30/2018

Description: This grant helped launch a new program leading to a bachelor's in nursing for military veteran students interested in becoming nurses.

COLLEGE OF LIBERAL ARTS & SCIENCES

Biological Sciences

Principal Investigator: Haidong Gu, assistant professor

Sponsor: National Institute for Allergy and Infectious Diseases

Title: Dissecting the Functional Domains of Infected Cell Protein 0 of Herpes Simplex Virus 1

Anticipated Total: \$1,881,807

Effective Dates: 4/15/2015 – 3/31/2020

Description: This project aims to garner more genomic information about HSV-1 and develop an understanding on how it employs multifunctional proteins to disrupt host defenses and escape immune surveillance. In particular, Gu and her team will look at infected cell protein 0 (ICP0), which plays a leading role in the tug-of-war of HSV-1 infection with nuclear domain 10 (ND10), the site of DNA virus transcription and replication.

Chemistry

Principal Investigator: Mary Kay Pflum, associate professor

Sponsor: National Institute of General Medical Sciences

Title: Chemical Approaches to Mapping Cell Signaling Pathways

Anticipated Total: \$ 1,115,276

Effective Dates: 8/1/2015 – 7/31/2019

Description: Kinase and phosphatase enzymes are involved in various diseases and are the target of multiple pharmaceutical drugs. The project will outline new chemical approaches to characterizing kinase and phosphatase substrates to aid in the understanding of disease and development of new treatments.

COLLEGE OF ENGINEERING

Chemical Engineering

Principal Investigator: Eranda Nikolla, assistant professor

Sponsor: U.S. Department of Energy

Title: Nanostructured, Targeted Layered Metal Oxides as Active and Selective Heterogeneous Electrocatalysts for Oxygen Evolution

Anticipated Total: \$750,000

Effective Dates: 8/15/2015 – 8/15/2020

Description: This project aims to pursue work that will lead to development of efficient catalysts for energy generation and storage. It aims to combine computational tools with nanoscience and catalysis to design nanostructured, nonprecious metal oxide electrocatalysts for oxygen evolution – a key reaction in electrochemical energy conversion systems, such as generation of H₂ from water. The proposed work will have a significant impact on the development of efficient energy conversion systems.

Principal Investigator: Jeffrey Potoff, professor
Sponsor: The DTE Energy Foundation
Title: DTE Energy Foundation Engineering Academy
Anticipated Total: \$1,200,000
Effective Dates: 7/1/2015 – 8/31/2019

Civil & Environmental Engineering

Principal Investigator: Carol Miller, professor
Sponsor: Erb Family Foundation
Title: Healthy Urban Waters
Anticipated Total: \$650,000
Effective Dates: 7/1/2015 – 6/30/2018
Description: This project will accelerate development of the Huron to Erie Alliance for Research and Training (HEART) field stations that promote collaborative water research and community education in the Huron-to-Erie corridor.