

RESEARCH PROGRAM

Medical Research Abstracts
for Grants Awarded in June 2019

City of Hope
Duarte, CA
Saswati Chatterjee
\$1,000,000
June 2019

Gene editing is revolutionizing research from medicine to agriculture. It is enabled by nuclease-based platforms, such as CRISPR, which predominantly use error-prone non-homologous-end-joining DNA repair, leading to unintended on-target mutations. Repair of nuclease-

Johns Hopkins University

Baltimore, MD

Abdel Hamad, Thomas Donner, Chunfa Jie, Ruhong Zhou, Mario Suva

\$1,000,000

June 2019

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reported in children with FASD and reveal male alcohol use to be an unrecognized contributing factor in the development of alcohol-induced growth defects. Using state-of-the-art sequencing technologies, this project aims to define the epigenetic mechanisms by which alcohol-induced errors in developmental programming transmit to the offspring and determine how long these environmentally induced effects persist after the males stop drinking. Subsequently, the investigators will examine why the offspring of alcohol-exposed males become growth restricted. This proposal challenges the prevailing paradigm, which exclusively focuses on maternal alcohol exposures and examines a novel hypothesis that considers paternal contributions to FASD birth defects. This study will be among the first to explore the role of sperm-inherited alterations in epigenetic programming in the development of a pediatric disorder and will develop biomarkers of exposure that will offer the opportunity to significantly enhance the health of future pregnancies.

Tulane University

New Orleans, LA

James McLachlan, John McLachlan, Franck Mauvais-Jarvis

\$1,000,000

June 2019

Across the animal kingdom, it is well-known that males and females exhibit different immune responses with females responding more robustly in nearly all cases. The reasons for this difference are not entirely understood.

Vanderbilt University Medical Center

Nashville, TN

Kasey Vickers, MacRae Linton, Ryan Allen, Quanhu Sheng

\$1,000,000

June 2019

As the leading cause of death worldwide, cardiovascular disease (CVD) affects one in three people. For decades, plasma cholesterol levels have been considered the leading risk factor for CVD, with low density lipoprotein-cholesterol (LDL