Drug development is a lengthy, complex, and costly process, entrenched with a high degree of risk and uncertainty that a drug will succeed to market. A major issue with this process is associated with the unknown pathophysiology for many diseases. The brain is enormously complex and that makes target identification extremely challenging. This is further complicated by the fact that *in vitro/vivo* models often cannot simulate the entire disease process. Moreover, other challenges maybe related to heterogeneity of the patient population and how those problems might be alleviated with increased clinical genomic and proteomic data acquisition/mining. These issues put greater emphasis on human data and how it might lead to improved target identification and validation. Presently, there is a lack of validated diagnostic and therapeutic biomarkers that may objectively detect and measure biological states in certain stages of the disease process. Recently, precision nano-theranostics has emerged as an innovative approach to address these problems. It has been noted in the past as well, that precision nano-theranostics yields critical molecular imaging that delivers new target identification and verification and other important patient data that can aid in the drug development process. Precision nano-theranostics can offer a powerful solution to drug discovery, delivery and development by eliminating the challenges associated with drug development, allowing for better evaluation of drug activity/efficacy and toxicity screening, and will benefit the healthcare system by lowering costs associated with drug development.

**Speaker Biography**

Dr. Elias Jackson is the Director of Scientific Public Relations for Vyripharm Biopharmaceuticals, a Biopharmaceutical firm that develops drugs to target cancer, Neurological disorders and other metabolic diseases. He was previously a professor and research faculty member at the Cardiovascular Research Center at the Yale University School of Medicine, and is a graduate of The University of Texas Medical Branch at Galveston.

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