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# 36ᵀᴴ Cardiovascular Nursing & Nurse Practitioners Meeting

### July 10-11, 2017    Chicago, USA

## *Bruce Leonard*

*University of Texas, USA*

### Precision medicine: Using OMICS to improve health and wellness in healthcare practice

The Centers for Disease Control (CDC) indicates that 117 million people or approximately 50% of the total population suffer from one or more chronic illness. Many chronic diseases are preventable. More than half of adults (52%) over the age of 18 do not meet our national recommendations for physical activity, and exercise. Former President Obama introduced the Precision medicine initiative (PMI) in January 2015. The program is designed to transform healthcare by taking into account individual differences in our genes, environments, and lifestyles. Precision medicine focuses on tailored just-in-time treatment to individuals based upon their genetic makeup. A key component of the PMI is the creation of cohort of 1 million volunteers to create a database of biomedical and behavioral research that can identify individual differences in disease process. The potential to address individual variations may transform our healthcare practices on how we approach health and wellness of individuals, families, and communities. OMICS refers to the biological studies in the fields such as genomics, proteomics, and metabolomics. Nearly all physiologic, sleep, wakefulness activities, metabolic, and endocrine processes in the body including glycemic, lipid, and carbohydrate metabolism, and cardiac function (heart rate and blood pressure) are controlled by genes most specifically clock genes that relate to our daily circadian awake and sleep cycles. Exercise activity is known to improve sleep, overall health and wellness, reduce risks of chronic diseases, inflammatory process, and improve health outcomes as a self-management strategy. Recent research by Steidle-Kloc et al. explains how exercise training, a part of lifestyle modification, can alter muscle clock genes in CAD (coronary artery disease) and T2DM patients. This presentation will explore the translation of what is known in our current state of science and how OMICS may transform our future in healthcare practice.

### Biography

Bruce Leonard is a Professor in the PhD program and a certified Family Nurse Practitioner at the University of Texas Medical Branch, School of Nursing, TX. Currently, his research focus involves using technology driven lifestyle monitoring devices for self-management that provides feedback to the healthcare provider for just-in-time coaching to improve long-term adherence to glycemic control among persons with type - 2 diabetes and examining circadian rhythm clock gene expressions as physiological outcome measures. Other research areas of interest have included: Quality-of-life and self-management of chronic illness among persons with COPD; instrument development in examining nurse practitioner student self-efficacy or confidence to perform standardized patient exams; the application of Team-Based Learning into online learning formats as an evidenced based flipped classroom learning format; and the integration and identification of biomarkers, genomics, and epigenetics into self-management research for persons with chronic illnesses.

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**Notes:**

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