



Mayo Foundation Chapter of Sigma Xi Public Lecture

Why is the Circadian System Important for Metabolic Health?

Lecturer: Aleksey V. Matveyenko, PhD

Date: February 17, 2015

Time: 7:30 pm

Place: Phillips Hall



Aleksey V. Matveyenko, PhD, is a senior associate consultant in the Department of Physiology and Biomedical Engineering and a recent recruit to the Center for Regenerative Medicine at Mayo Clinic. For more than a decade, Dr. Matveyenko has focused on understanding the pathophysiology of metabolic syndrome and diabetes mellitus, with an emphasis on understanding gene-environment interactions. He completed his doctoral studies at the University of Southern California and a postdoctoral fellowship at the University of California, Los Angeles (UCLA). Subsequently, while on the UCLA faculty from 2008 to 2014, he established an independent National Institutes of Health-funded laboratory focused on identifying molecular and physiologic mechanisms for the loss of pancreatic beta cell mass and function in diabetes mellitus. At UCLA, he was also actively involved in teaching undergraduate, graduate, and medical students and developing class curricula. His current research focuses on understanding the role of the circadian system in regulating glucose homeostasis, pancreatic beta cell function, and regenerative potential in diabetes through an integrative approach that ranges from cell line studies at the cellular and molecular levels to translational *in vivo* studies.

The increasing incidence of type 2 diabetes mellitus and metabolic syndrome worldwide is an epidemic that threatens global health and economic stability. Type 2 diabetes mellitus is a complex metabolic disease characterized by complex interactions between genetic susceptibilities and environmental risk factors. Lifestyle choices and environmental conditions have long been known to modulate susceptibility to the disease in humans. However, environmental conditions that disrupt circadian rhythms, such as shift work, light at night, and sleep loss are increasingly prevalent in modern societies and augment susceptibility to type 2 diabetes mellitus. This lecture will review state-of-the-art knowledge from recent epidemiologic, clinical, and basic science studies of the molecular, physiologic, and behavioral mechanisms underlying the relationships between the circadian system and metabolic health.

