

# 82<sup>nd</sup> WPI IIS Seminar

## The story of 1 billion heartbeats: Initiation and perturbation of heart rhythm

The heart is a reliable organ that produces more than 1 billion beats during its life time. Previous studies have established a redundant firing mechanism to be responsible for such a robust function. In addition, the autonomic nerve system is associated with normal operation of the heart. However, it has also been implicated in many forms of cardiac arrhythmias. The incidence of lethal ventricular fibrillation and non-lethal atrial fibrillation both show a circadian pattern, implying the involvement of the autonomic nerve system. We will demonstrate optical mapping and ambulatory wireless recording results of dynamic events of atrial and ventricular fibrillations, and attempt to establish a correlation between autonomic function and arrhythmogenesis. The prospect of using wearable devices to predict cardiac arrhythmias will be discussed.

Speaker:

**Dr. Shien-Fong Lin**

Institute of Biomedical Engineering,  
National Chiao-Tung University, Taiwan

**Date: Thursday, June 30, 2016**

**Time: 12:00 - 13:00**

**Venue: 1F Auditorium, IIS Building  
University of Tsukuba**



★Light refreshments will be served.



**Contact: International Institute for Integrative Sleep Medicine  
Phone: 029-853-8080 (ext.8080)**