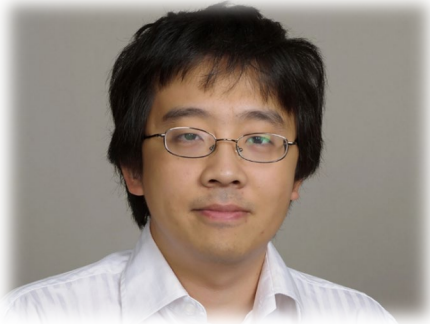




## NIDDK P30 Center for Molecular Studies in Digestive and Liver Diseases Research Seminar



### **Bokai Zhu, PhD**

Assistant Professor  
Department of Medicine  
Division of Endocrinology & Metabolism, Aging Institute of UPMC  
University of Pittsburgh

*"Unveiling 'Musica Universalis' of the Cell: Central Dogma Riding the 12-hour Tides"*

Thursday, April 21, 2022  
12:00 – 1:00 PM EST  
901 Biomedical Research Building  
[Zoom Link](#)

### **BOKAI ZHU'S RESEARCH INTERESTS**

Unveiling "Musica universalis" of the Cell: A Brief History of biological 12h Rhythms: Musica Universalis is an ancient philosophical concept that claims the movements of celestial bodies follow mathematical equations and resonate to produce an inaudible harmony of music, and the harmonious sounds that men make were mere an approximation of this larger harmony of the universe. Besides music, electromagnetic waves such as light and electronic signals also are presented as harmonic resonances. Despite the seemingly universal theme of harmonic resonance in various disciplines, it was not until very recently that the same harmonic resonance was discovered to also exist in biological systems. Intriguingly, contrary to the traditional belief that biological system is either at constant homeostasis (not rhythmic) or cycling with a single frequency, it is now appreciated that most biological systems have no homeostatic "set point", but rather oscillate as composite rhythms consisting of a series of superimposed oscillations. These oscillations often cycle at different harmonics of the circadian rhythm (~24h), and among them the ~12h oscillations are found very prevalent. My lab is studying these 12h oscillations, with special interest in their evolutionary origin, regulation and functions in mammals, as well as their relationship with the 24h circadian rhythm.

The meeting will start promptly at 12:00 pm. Please be on time.  
Everyone inside and outside of the division is welcome to attend.