Center for Molecular Spectroscopy and Dynamics, IBS-Korea University

IBS Center for Molecular Spectroscopy and Dynamics

COLLOQUIUM

- **SPEAKER**
  Prof. Euiheon Chung (GIST)

- **TITLE**
  Oncophotonics and neurophotonics for translational medicine

- **ABSTRACT**
  Oncophotonics is a branch of biophotonics that involves the study of tumor including its detection and treatment. Biophotonics involves optical imaging of target molecules, cells, or tissues as well as optical monitoring of interventions to change the course of disease process. In vivo imaging of small animals bearing tumor offers a unique opportunity to understand neoplastic alteration and treatment monitoring. I will discuss the development of molecular endoscopy for the detection of gastrointestinal tumors. Targeting multiple molecular signatures of colorectal tumors with novel molecular probes may improve our currently limited screening procedures in the clinic. Towards clinical translation in mind, a multi-color flexible endoscope that is compatible with clinical endoscopes has been developed with a porcine model in addition to rodent tumor models. In addition, I demonstrate a potential therapeutic effect of laser irradiation on cancerous growth. Using fractional laser irradiation, typically used for skin care in clinic, we found inhibitory effect on early tumor growth in preclinical models. This photothermal effect of laser on early stage tumor may provide a novel anticancer strategy as an alternative cancer prevention when conventional strategies are not available. Neurophotonics describes optical methods for imaging and manipulation of the brain. I will describe neurophotonic approaches for studying brain diseases. Advanced optical approaches to brain structure and function are driving a revolution in understanding the working principles of the brain and its pathology such as stroke. These biophotonic technologies with clinically meaningful animal models provide us fundamental insight into pathophysiology and help us develop translational therapeutic strategies.

- **DATE AND VENUE**
  January 12, 2018 (Friday, 1:00 - 2:00 pm)
  Room 433, Asan Science Bldg.

- **LANGUAGE**
  Korean

- **INVITED BY**
  Associate Director Wonshik Choi