



IBS Center for Molecular Spectroscopy and Dynamics

COLLOQUIUM

- **SPEAKER**

Dr. Yookyung Jung (Harvard Medical School)

- **TITLE**

Application of Optical Microscopy from Nanomaterials to Live animals

- **ABSTRACT**

My previous research achievements about nano-photonics and bio-imaging will be summarized in this presentation. The biomedically important applications of the label-free optical imaging methods such as optical coherence tomography (OCT) and coherent anti-Stokes Raman scattering (CARS) microscopy will be introduced shortly. Main focus of the presentation will be the application of the video-rate intravital optical microscopy to the mouse bone marrow. In particular, the permeability of the blood vessels in the mouse bone marrow will be discussed. Understanding the permeability of the blood vessels in the bone marrow is important because it is highly related with the ability to transport cells, molecules, nutrients, or oxygen in and out of the surrounding tissue. However, the accurate measurement of the permeability of the vessels in the bone marrow has been challenging due to the high permeability and the proximity of the micrometer-size vessels. In this presentation, I visualize the microvasculature in bone marrow *in vivo* by combining the customized video rate confocal, multiphoton microscopy and the surgery of opening the scalp of a mouse for optical access to the underlying dorsal skull surface. Fast, video rate microscopy enabled the accurate measurement of permeability at early time point after the vasculature dye injection before retention of dye occurs in the tissue. I will finish the presentation with the research plans for the deep tissue and label-free optical microscopy. These will cover the application of the laser ablation, *in vivo* flow cytometry, and the oblique back illumination microscopy (OBM).

- **DATE AND VENUE**

June 5, 2017 (Monday, 5:00-6:00 p.m.)
Seminar Room 116, KU R&D Center

- **LANGUAGE**

English/Korean

- **INVITED BY**
Associate Director Wonshik Choi

* Dr. Yookyung Jung will be joining IBS CMSD as a YSF(Young Scientist Fellow) researcher from September 2017. If you want to discuss with Dr. Yookyung Jung (from 3 to 5 pm) or have a dinner with him, please contact to Dr. Seokchan Yoon (sdlkfwpeorup@gmail.com).