



**Thursday, December 20<sup>th</sup>, 2012, 4:00 P.M.**

**Room No. 109, DASAN bldg. 1<sup>st</sup> Floor**

*(Host: Prof. Jae Gwan, Kim / Language: English)*

# **In Vivo Therapy Monitoring of Breast Cancer using Diffuse Optics based on Endogenous and Exogenous Contrast**

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Breast cancer is one of the most common cancers and the leading cause of cancer death among women worldwide. Advances in early detection, accurate diagnosis, and prediction of therapeutic efficacy are important in improving survival of those affected by the disease. Diffuse optical methods have a great potential to assess therapeutic efficacy of breast cancer, by providing quantitative hemodynamic information (i.e., blood flow, blood oxygenation and total hemoglobin concentration) as well as tissue scattering of cancerous and surrounding healthy breast tissues non-invasively.

Furthermore, the use of non-ionizing radiation and technologically simple, fast, inexpensive instrumentation makes diffuse optics attractive for translational research. In this presentation, clinical and preclinical research tools and approaches to test the capabilities of diffuse optics in early prediction of therapeutic efficacy will be introduced. In addition, the future research directions exploring different cancer therapies and new metabolic parameters using novel imaging agents will be discussed.

## **Biosketch**

Regine Choe received her B.S. in physics from the Pohang University of Science & Technology, Korea in 1996, and Ph.D. degree in physics from the University of Pennsylvania, in 2005. After finishing her postdoctoral work at the University of Pennsylvania, she joined the Biomedical Engineering department of the University of Rochester as an Assistant Professor, in 2011. Her research is focused on the development of diffuse optical methods for the clinical application of breast cancer diagnosis and therapy monitoring.