

## 2011 Guest Seminar Speaker



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### **THERAGNOSIS A NEW PARADIGM OF PERSONALIZED MEDICINE**

Companion Diagnosis, based on pharmacogenomics, has been recognized as one of the most important key representatives of personalized medicine. However, Companion Diagnosis does not provide any clues in developing new ways of therapeutics but it only provides a best choice of drugs based on given genetic information. Therefore to step further for the future advancement of personalized medicine, we need to introduce a concept of therapeutics in Companion Diagnosis. Here, we introduce Theragnosis as a new paradigm of personalized medicine which includes both a real-time visualization of disease phenotypes and a novel adaptive design of therapeutics all together at the same time.

Approaches in combining these two important functionalities all together in a polymer nanoparticle are proposed in this presentation. Self-assembled and auto-quenched fluorescent nanoparticulate probes have been designed to visualize target molecules, such as proteases and protein kinases. These nanoparticles can also serve as useful therapeutic tools with using novel drug delivery technologies. Moreover, it might be possible to evaluate therapeutic efficacies in real-time manner when therapeutic design shares principles of diagnostic imaging. Examples of theragnostic design of 'dose-amplification' will be introduced in this presentation.

**4:00pm**  
**Monday, October 17, 2011**  
**HSEB, Room 4100B**