

## Distinguished Lecturers Seminar Fall 2007

**Speaker: Dr. Stephen TC Wong**  
**The Methodist Hospital Research Institute**

**WHEN: October 29, 2007**

**TIME: 11:00 AM**

**WHERE: PGH 563**

### **Biomedical Image Computing – a Systems Perspective**

**Stephen TC Wong**

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#### *Abstract*

As the scientific paradigm of gene determinism is waning, systems biology surfaces to replace now 'aged' molecular biology by focusing on the interaction networks of living organisms, such as protein-protein interactions, rather than the organisms' individual genes, proteins, or components. Imaging technology has long lagged the throughput of other components in biological research, but recent improvements are putting it back on the radar screen as a systems-scale tool to view cells or whole organisms in multiple dimensions and in populations. Scientists are beginning to ask genome- or proteome-scale questions. The promise of combining imaging with other high throughput technologies will bring the research of systems biology into a new and exciting level with the potential of translating scientific discovery from the bench to the patient bedside. In this talk, I will discuss the existing synergies between systems biology and imaging, focus on the recent existing developments of systems biologic applications ranging from biomarker discovery and drug screening to computer-aided diagnosis and image-guided therapy.

#### **Bio:**

Stephen TC Wong, PhD (CSEE, Lehigh), PE (EE) is Vice Chairman of Radiology and Chiefs of Medical Physics and Bioinformatics, Methodist Hospital. He has over 20 years of R&D experience in academia and industry, including HP, Bell Labs, Japanese Fifth Generation Computing Project, Royal Philips Electronics, UCSF, and Harvard. His lab investigates biomedical imaging and informatics issues ranging from drug screening and biomarker discovery to computer-aided detection and image-guided therapy. He published over 200 scientific papers, 3 books, and 6 patents. Before joining Methodist, he founded two institution-wide research centers at Harvard: the HCNR Center for Bioinformatics at Harvard Medical School and the Functional and Molecular Imaging Center, Brigham & Women's Hospital, and headed product development departments at Philips Medical Systems and on-line brokerage development division at Charles Schwab.