

# **Asynchronous Communication and Computing in Wireless Sensor Networks**

**Speaker:** Dr. Yonghe Liu, CReWMaN and CSE Faculty, UTA

**Date:** Friday, February 1, 2008

**Time:** 10:00 - 11:30 AM

**Venue:** CReWMaN Lab (Woolf Hall 413)

## **Abstract**

In stark contrast with traditional data forwarding networks exemplified by the Internet, wireless sensor networks are uniquely characterized by drastically low data rate, often at several bytes per minute, owing to application specific requirements. In existing scheme, energy efficiency has overwhelmingly relied on coordinated sleep/wakeup schemes, where communications are synchronized into a short time window. Inevitably this will augment the collision probability and irrelevant packet listening, the two dominant power consumption components in wireless networks. In this talk, we describe an innovative asynchronous communication architecture, in which a sensor node is allowed to directly write data into a special, reactive module (RFID tag based) residing on the receiving node while its main platform (the central controller) is asleep. The result is a store-and-forward, asynchronous communication pattern which can achieve ultra energy efficiency.

## **Biography**

Dr. Yonghe Liu received his Ph.D. degree in Computer Engineering from Rice University. Prior to joining UTA in 2005 as an Assistant Professor in the Department of Computer Science and Engineering, he worked at Texas Instruments. His research interests lie in various aspects of wireless networking and system integration. An active faculty of CReWMaN, Dr. Liu directs the Security and Sensor Networking Lab (SSN) and funded projects supported by Texas Advanced Research Program and National Science Foundation.