NATIONAL UNIVERSITY OF SINGAPORE
School of Computing
CS SEMINAR

Title: A General Technique for Non-blocking Trees
Speaker: Professor Faith Ellen (University of Toronto)
Date/Time: 11 March 2014, 04:00 pm to 05:30 pm
Venue: Executive Classroom, COM2-04-02
Chaired by: Dr Gilbert, Seth Lewis, Dean's Chair Assistant Professor, School of Computing (gilbert@comp.nus.edu.sg)

Abstract:
A library of concurrent data structures can make the task of developing concurrent software much easier. Although sequential data structures can be transformed into concurrent data structures in straightforward ways using locks or transactional memory, the results are generally inefficient. I'll describe a general method for obtaining efficient non-blocking implementations of a large class of trees, including a chromatic tree, which is a relaxed version of a red-black tree, using only standard machine instructions.

This is joint work with Trevor Brown and Eric Ruppert and appeared at PODC 2013 and PPoPP 2014.

Biodata:
Faith Ellen is a Professor in the Department of Computer Science at the University of Toronto. She received her Ph.D. from the University of California at Berkeley in 1986 and was an Assistant Professor in the Computer Science Department at the University of Washington in Seattle from 1983 to 1986. Her research spans the theory of distributed computing, complexity theory, and data structures and she is primarily interested in understanding how parameters of various models affect their computational power.