

Distinguished Speakers Series Presents

Eric Allender, Ph.D.
Rutgers University



Circuit Complexity Meets the Theory of Randomness

In the past decade, there has been remarkable progress in a field known as "derandomization" -- leading to a situation where most experts now believe that any probabilistic algorithm can be replaced by a deterministic algorithm with comparable complexity. The tools and techniques of derandomization have also opened new connections between two fields that had previously seemed to have little connection to each other:

1. the field of circuit complexity (in which we try to find the most efficient circuitry to compute a given Boolean function), and
2. the field of algorithmic information theory (aka "Kolmogorov Complexity"), which provides a mathematical definition of "randomness".

This lecture will introduce the listener to these two fields, and show how the study of derandomization has opened links that have enriched each field.

Eric Allender is widely recognized as a leading researcher in computational complexity theory. He has given numerous invited addresses at computer science symposia worldwide. He received a B.A. from the University of Iowa in 1979, majoring in Computer Science and Theater, and a Ph.D. from Georgia Tech in 1985. He has been at Rutgers University since then, serving as department chair from 2006 to 2009. He is a Fellow of the ACM, and serves on the editorial boards of ACM Transactions on Computation Theory, Computational Complexity, and The Chicago Journal of Theoretical Computer Science. During the 2009/2010 academic year, he was a Fulbright Fellow in South Africa.

Thursday, November 11, 2010

3:30-4:45 pm

University at Buffalo - North Campus – Norton 112

This talk is free and open to the public - Refreshments for attendees after the talk in 224 Bell Hall
For more information, please call 645-3180