



# Illinois Center for Wireless Systems

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## ICWS Seminar Series



### Low SINR Operation of Wireless Networks

Professor Rene Cruz  
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Friday, August 24, 2007, 11:00am  
141 CSL

**Abstract:** We consider some simple models of operation for wireless networks. Within the context of these models, we argue that a natural regime for operation with high throughput per unit area occurs when the Signal to Interference plus Noise Ratio (SINR) at the receiver of each node is small, e.g. less than 0dB. With receiver architectures that are in common use, it is problematic to communicate asynchronously at low SINR, due to the inability to acquire synchronization. We conclude with a brief description of current research at UCSD aimed at demonstrating the feasibility of asynchronous packet communication at low SINR.

**Biography:** Rene Cruz received the BS and Ph.D. Degrees from the University of Illinois, Urbana, and the SM degree from MIT, all in electrical engineering. Since 1987, he has been on the faculty in the Dept. of Electrical and Computer Engineering at UCSD, where he is currently a professor.