# I2PC

## Illinois-Intel Parallelism Center

# Distinguished Speaker Series

# CJ Newburn

*Intel Corproation*

# Many Integrated Core (MIC): What can you do with an IA processor on the other end of the wire?

Thursday, February 2, 2012

4 - 5 PM CST

3405 Siebel Center

## Abstract

The motivation for microarchitectures that make different trade-offs to achieve more power efficient, throughput-oriented processing units is clear. But how do you want to program it, and how do you want that to fit into your overall ecosystem? Whether you're a researcher or a commercial practitioner, whether you thinking short term or looking ahead to exascale, there are ample reasons why you may want the benefits of having a fully-capable IA processor on the other end of the PCIe wire, or as an endpoint on your network.

This talk will explore some of the execution models and system capabilities that having a many-core IA enables. It also draws on early experience on the Knights family of processors to take a look at the tuning implications that such a system has. I'll wrap up with tastings from several areas that we'd like help with from the research community.

## Bio

Chris (CJ) Newburn is currently focused on the software stack and its performance for Intel's Many Integrated Core (MIC) architecture products, from programming tools down to middleware. He has served as a feature architect for Intel's Intel64 platforms, and has contributed to a combination of hardware and software technologies that span heterogeneous compiler optimizations, middleware, JVM/JIT/GC optimization, acceleration hardware, ISA changes, microcode and microarchitecture over the last fourteen years. Performance analysis and tuning have figured prominently in the development and production readiness work that he's done. He wrote a binary-optimizing, multi-grained parallelizing compiler as part of his Ph.D. at Carnegie Mellon University. Before grad school, in the 80s, he did stints in a couple of start-ups, working on a voice recognizer and a VLIW mini-super computer. He's glad to be working on volume products that his Mom uses. And he'll soon be upgrading to have the fastest chip in the world in a machine under his desk.

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