

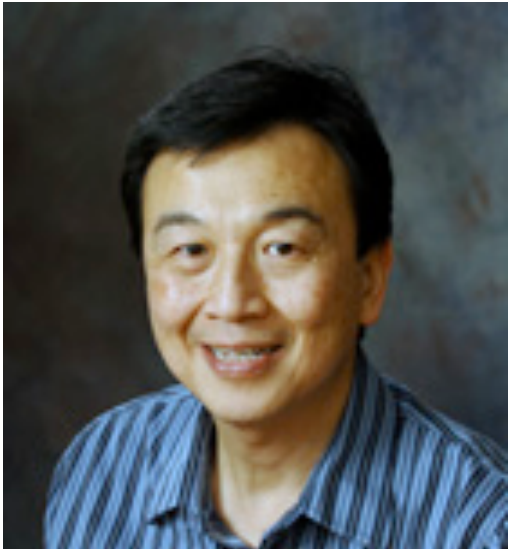
Thursday, October 8th

Scaife Hall Auditorium

Room 125

4:30 p.m.

Refreshments at 4:00 p.m.

**Professor Wen-mei W. Hwu****Electrical & Computer Engineering
University of Illinois Urbana-Champaign**

Wen-mei W. Hwu is a Professor and holds the Sanders-AMD Endowed Chair in the Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign. His research interests are in the area of architecture, implementation, and software for parallel computing systems. He is the director of the IMPACT research group (www.crhc.uiuc.edu/Impact).

Hwu serves on the Executive Committee of the MARCO/DARPA C2S2 (www.c2s2.org) and GSRC (www.gigascale.org) Focus Research Centers. He leads the GSRC Concurrent Systems Theme and directs the CUDA Center of Excellence at UIUC. He also co-directs the \$18M UIUC Intel/Microsoft Universal Parallel Computing Research Center with Marc Snir and serves as one of the principal investigators of the \$208M NSF Blue Waters Petascale computer project. For his contributions in research and teaching, he received the ACM SigArch Maurice Wilkes Award, the ACM Grace Murray Hopper Award, the Tau Beta Pi Daniel C. Drucker Eminent Faculty Award, and ISCA Most Influential Paper Award. He is a fellow of IEEE and ACM. Dr. Hwu received his Ph.D. degree in Computer Science from the University of California, Berkeley.

**Many -core Parallel Computing
Research at the Illinois UPCRC**

The Illinois Universal Parallel Computing Research Center (UPCRC) started in 2008 with \$10M funding from Intel and Microsoft to help make parallel programming the mainstream programming practice in the client computing domain. In this talk, I will focus on the many-core aspect of our work. Many-core processors are designed to maximize the execution throughput of parallel applications. A current many-core exemplar is the NVIDIA G280 Graphics Processing Unit (GPU) with 240 cores, each of which is a heavily multi-threaded, in-order processor that shares its control and instruction cache with seven other cores. Both AMD and Intel also have many-core processor products in the market or soon to be in the market. With the recent introduction of the OpenCL standard, these many-core processors are quickly gaining momentum as computing platforms for mass market applications. In this talk, I will discuss several key lessons we have learned from joint development of a video processing application framework designed to revolutionize HCI and a set of advanced programming tools and runtime software/hardware environments. This is joint work with Thomas Huang, Minh Do, Sanjay Patel, John Stone, Nacho Navarro, Matthieu Delahaye, David Padua, Marc Snir, and Bill Gropp, along with 12 graduate students.

ECE Seminar HostsJeyanandh Paramesh paramesh@ece.cmu.eduOnur Mutlu onur@cmu.eduGabriela Hug ghug@ece.cmu.edu