ICCAD-2000 Keynote

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Description: As semiconductor technology scales, wires, not devices, dominate the delay, power, and area of integrated circuits. To realize the potential of wire-limited technology requires design flows and supporting tools that explicitly manage key wires early in the design process. Such a wires-first flow gives the designer early visibility of power and delay issues and the control over wiring needed to resolve these issues. Such an approach offers increased performance and reduced design time compared to wires-last ASIC flows. This talk will present a system designer's perspective on the challenges of emerging semiconductor technology and how design flows and tools should adapt to meet these challenges.

Biography: William Dally received the B.S. degree in Electrical Engineering from Virginia Polytechnic Institute, the M.S. degree in Electrical Engineering from Stanford University, and the Ph.D. degree in Computer Science from Caltech.

Bill is currently a Professor of Electrical Engineering and Computer Science at Stanford University where his group has developed the Imagine processor, which introduced the concepts of stream processing and partitioned register organizations, and low-power high-speed signaling technology. Bill has worked with Cray Research and Intel to incorporate many of these innovations in commercial parallel computers, with Avici Systems to incorporate this technology into Internet routers, and with Chip2Chip, Inc. to commercialize high-speed signaling technology. He has received numerous honors including the ACM Maurice Wilkes award. He currently leads projects on high-speed signaling, computer architecture, and network architecture. He has published over 110 papers in these areas and is an author of the textbook, Digital Systems Engineering.