



## ISC'09 Keynote Speakers to Present a Global Perspective on High Performance Computing

**HAMBURG, Germany — When the world's high performance computing community convenes June 23-26 at the 2009 International Supercomputing Conference, the four keynote speakers will cover a wide range of topics, from hardware evolution to a future when smart systems will free up human intellect to focus on the most critical challenges.**

ISC, which will be held in Hamburg for the first time in the 24-year history of the conference, has a well-established reputation for presenting well-founded, precise and up-to-date information in an environment that encourages informal conversations and sharing of ideas. And of all the thought-provoking sessions scheduled for ISC'09, none are likely to spark more discussion than the keynote addresses. Here is a short look at each of the talks:

Tuesday, June 23: *Andreas "Andy" von Bechtolsheim*, the legendary co-founder of Sun Microsystems and founder and Chief Development Officer of Arista Networks will discuss *"The Evolution of Interconnects for High Performance Computing."* In his presentation, von Bechtolsheim will discuss trends in the high performance computation market, including the challenge of building large fabrics and the role of InfiniBand and 10 Gigabit Ethernet. He will also look at how to address the challenges of building, integrating, and using petascale systems including system power and cooling, system stability, and scalability. Finally, we will look at the impact of solid state memory for HPC deployments and how it can address data bandwidth within the system to deliver improved overall performance through a more balanced system architecture.

Wednesday, June 24: *Prof. Dr. Thomas Sterling*, the Arnaud & Edwards Professor of Computer Science at Louisiana State University, will share his views in a look at the past year – a topic that has become an ISC tradition. In his talk *"HPC Achievement & Impact – 2009,"* Sterling will examine the beginning of the Petaflops Era. Long awaited and for which many have endeavored, this year just concluded has been the first of a decade long epoch for which sustained performance will be measured in petaflops. At least two machines in the U.S. are now petaflops capable and a number of systems around the world are in various planning stages to deliver this unprecedented scale. Both IBM and Cray are exploiting advances in multicore and heterogeneous architectures to find the sweet spot between applications, sustained performance, power consumption, and cost. The challenging confronting HPC is the effective programming of multicore architectures and over the last year, significant advances have been achieved that will be discussed.

Thursday, June 25: *Prof. Dr. Gunter Dueck*, Chief Technologist & Distinguished Engineer at IBM in Germany, will give a sure-to-be remembered talk on *"Lean Brain Management – More Success & Efficiency by Saving Intelligence."* In it, Dueck advocates a new cold-blooded view



on the use of intelligence or skill at work. We observe with utmost concern, for instance, pharmacists with a Ph.D. selling aspirin, or IT-gurus showing inexperienced users how to shut down computers instead of just turning off the power switch. A closer look reveals that most of the brain work is used for fixing broken business processes at work. Lean Brain Management aims at economizing on intelligence by moving all the necessary brain work into a perfect system which can be handled by completely unskilled workers – only the system must be intelligent, not the employees. The first stunning successes of Lean Brain Management have been achieved in call centers and fast food chains. Therefore, Lean Brain Management can help finally to avoid human workers at all. The future vision of Lean Brain Management (LBM) is to let the clients do all the work for themselves.

Friday, June 26: *Prof. Dr. Edgar Körner*, President, of the Honda Research Institute Europe in Germany, will discuss *"The Brain-Like Vision."* According to Körner, "Understanding essential principles of how the brain organizes behavior may enable us to provide our technical artifacts at least with some aspects of brain-like intelligence. Our approach is based on the assumption that the essence of brain computing is not in the local processing or learning algorithm but in the way the brain organizes processing. The challenge of such an approach is that rather than modeling isolated subsystems, large-scale computational models of complete functional blocks at several interacting levels of complexity have to be investigated. The simulation of large-scale hypotheses on brain function is limited by the available technology. Therefore, the Honda Research Institute Europe, we investigate different levels in parallel and convey fundamental results between these levels in order to circumvent the incorporation of all complexity levels in one system set-up."

An overview of the ISC'09 conference program, including the keynote sessions, can be found at <http://www.supercomp.de/isc09/Program/Overview>.

## **About ISC'09**

The four-day high performance computing conference and trade show at the Congress Center Hamburg provides a unique international platform to gain insights, network and do business, all under one roof. With over 1,500 attendees and more than 120 exhibitors from over 45 countries expected to attend, ISC'09 is shaping up to be the most extensive and dynamic since the conference began as a meeting in Mannheim in 1986. ISC is also the largest high performance computing exhibition in Europe. All conference proceedings are conducted in English.

Advance registration for ISC'09 continues through May 25, and in addition to reduced rates, a number of one-day options for both the program and exhibition are being offered for the first time. For complete details on registration categories and rates, go to: <http://www.supercomp.de/isc09/Registration-Travel/Attendance-Fees>