

NCCS Snapshot

The Week of December 15, 2008

NATIONAL CENTER
FOR COMPUTATIONAL SCIENCES



Oak Ridge National Laboratory
U.S. Department of Energy

2009 DOE INCITE Projects Allocated at ORNL



Office of Science
U.S. DEPARTMENT OF ENERGY 

INCITE

Advancing America's Science
and Industrial Competitiveness

- In 2009, the NCCS will make nearly 470 million processor hours available on Jaguar, its Cray XT5 supercomputer, under DOE's Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program
- The 38 separate projects will advance breakthrough research in critical areas such as climate studies, energy assurance, materials, and other areas of fundamental science
- ORNL's allocation in the coming year is more than 3 times the 145 million processor hours allocated in 2008 and more than 6 times the 75 million allocated in 2007

"It's extremely gratifying to know that we will be working with such a strong collection of scientific partners, particularly in areas of such critical importance to the nation."

Jim Hack, NCCS Director

Jaguar to host more than half of allocated hours

Oak Ridge Supercomputer Wins Big at HPC Challenge

'Jaguar' demonstrates its power and ease of use

- ORNL's Cray XT5, known as Jaguar, placed in 3 out of 4 categories at the High-Performance Computing (HPC) Challenge awards, announced at SC08
- Jaguar won two "gold medals" and one "bronze" in the head-to-head competition
- Jaguar won 1st place for both speed in solving a dense matrix of linear algebra equations and sustainable memory bandwidth

"The Cray Jaguar at ORNL winning two of the HPC Challenge benchmarks shows the power and potential of the computer system for handling some of the most challenging computational science problems."

Jack Dongarra, University of Tennessee-Knoxville and ORNL

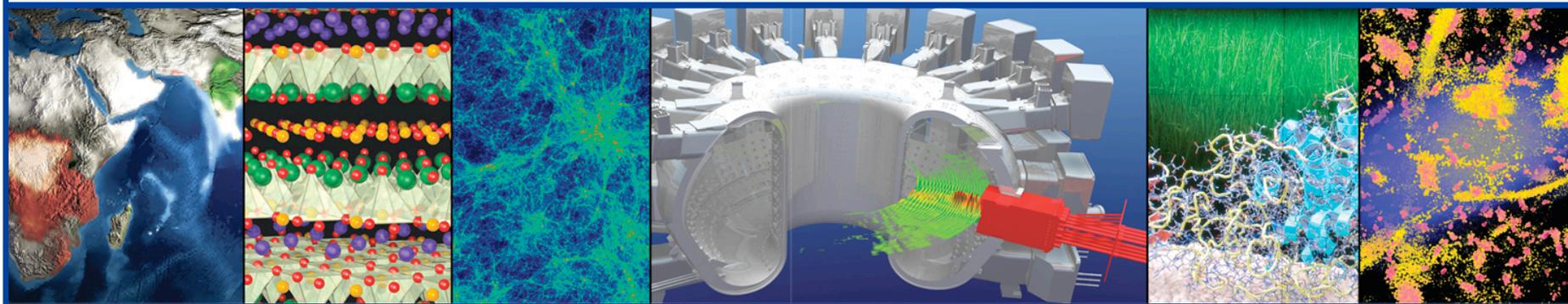


NCCS Experts Share Their Views with the World

Hack and Kothe interviewed for HPCwire

- NCCS Director Jim Hack and Science Director Doug Kothe recently shared their thoughts with the HPC community in interviews published in the online magazine *HPCwire*
- Hack outlined the future of computational climate science and Oak Ridge National Laboratory's climate science initiative in particular
- Kothe reviewed the range of breakthrough research now possible on petascale computing systems such as the lab's Jaguar supercomputer

"The breadth and depth of critical science potentially solvable on this system are daunting." – NCCS Director of Science Doug Kothe in *HPCwire*



Kendall Co-chairs Cluster Challenge



Ricky Kendall



- The NCCS's Ricky Kendall recently helped organize a contest at SC08 to excite and educate the next generation of HPC professionals
- In The Cluster Challenge, undergraduates from around the world built computer clusters that would fit on a single rack, run a scientific application using 26 amps of power or less, and arrive at an answer first
- When the points were all tallied, a joint team from Indiana University and Technische University Dresden triumphed

"The goal is to understand high-performance computing from a small-cluster perspective."

Ricky Kendall, NCCS

Indiana University and Technische University Dresden triumphs at SC08