



## 2009 INCITE Call for Proposals for Allocations of Supercomputing Time

*Oak Ridge National Laboratory's Leadership Computing Enables High-Impact Science*

### Proposal Deadline: August 11, 2008

**Unique Computing Opportunities.** The U.S. Department of Energy (DOE) Office of Science has released its 2009 Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program Call for Proposals (CFP). INCITE supports large-scale computational science that employs a substantial portion of a high-performance computing system's resources at any given time. Successful proposals are awarded generous allocations of computer time and data storage on leadership-class supercomputers at Oak Ridge National Laboratory in the National Center for Computational Sciences (NCCS). A small number of large awards (on the order of millions of processor hours per award) will be made. INCITE encourages proposals from diverse science domains and a wide range of institutions (DOE laboratories, universities, other research institutions) and funding sources (DOE, other agencies, industry).

**Jaguar (Cray XT4).** Among the most powerful computers in DOE's Office of Science, Jaguar has 263 TF of capability and 62 TB of memory. The machine has 7,948 nodes, 7,832 of which are configured as compute nodes, each composed of a quad-core 2.1 GHz AMD Opteron™ processor and 8 GB of memory. Remaining nodes provide input/output and login services; each contains a dual-core 2.6 GHz AMD Opteron™ processor and 8 GB of memory. The operating system is Linux.

**Scientific Computing Liaisons.** Users have partners at the NCCS who help them squeeze the most science out of the supercomputers. The NCCS liaisons are research scientists, visualization specialists, and work-flow professionals who are both expert in their fields—chemistry, physics, astrophysics, mathematics, computer science, climate science, etc.—and proficient in designing and optimizing code for use on NCCS systems.

**Recent Science Highlights.** Through simulations, combustion scientists fully resolved flame features (key to improving engine design) for the first time and astrophysicists provided an explanation of pulsar spin that fit astronomers' observations. Biologists simulated the mechanism by which new Alzheimer's drugs may stop the growth of fibrils and even disassemble them. Physicists gained insight into confining fusion plasmas. These and other capacity-class simulations run at the NCCS serve an Office of Science goal to advance America along the path to petascale computing (capable of a quadrillion calculations per second) in support of innovative, high-impact science.

**Logistics of the Call for Proposals.** The CFP will close at 11:59 p.m. EDT Monday, August 11, 2008. Award decisions are expected by December 2008. Access to computing systems will be established upon completion of appropriate agreements and facility-specific procedures. The announcement can be found at <http://www.doe.gov/news/6255.htm>, and the CFP may be accessed at <http://hpc.science.doe.gov/>. For assistance with the application process, please contact NCCS representatives at [help@nccs.gov](mailto:help@nccs.gov).



*Cray XT4 Jaguar*