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NCAR & CU JOIN INTEL PARALLEL COMPUTING CENTERS PROGRAM

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BOULDER —The National Center for Atmospheric Research (NCAR) and the University of Colorado Boulder (CU-Boulder) announced today that they will join the Intel Parallel Computing Centers program. Participants in the program will develop methods to increase the performance of applications that use advanced microprocessor technologies and will help train the next generation of scientists and engineers who will apply these new technologies to challenges of societal importance.

The NCAR/CU team will focus on weather and climate applications, including the NCAR-based Community Earth System Model (CESM), Weather Research and Forecasting model (WRF), and Model for Prediction Across Scales (MPAS), three of the most widely used applications in the field. The Indian Institute of Science in Bangalore, India, will also collaborate with the NCAR/CU-Boulder team on the project.

This international public-private partnership is one of several Intel Parallel Computing Centers being established with recognized high performance computing institutions and research groups. It is part of the research and academic work that Intel supports in the quest for increasing efficiency and optimization of parallel microprocessor computer architectures.

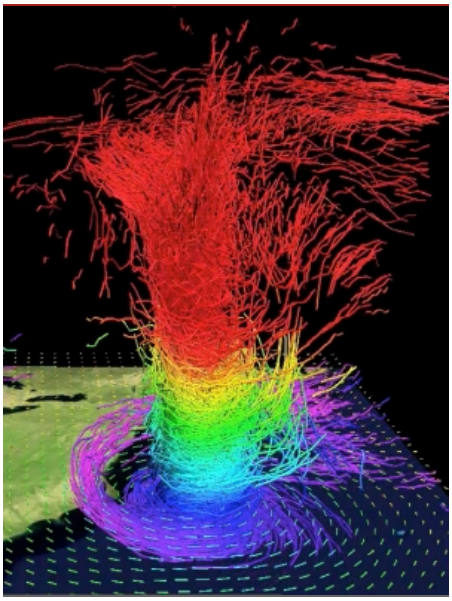
To solve today's most challenging scientific problems, computer scientists must coordinate many processing elements, assuring they work together efficiently on the same problem. Called parallel processing, this approach is essential to exploiting the power of the latest generation of Intel® processors.

"This partnership will accelerate the important work we are doing to prepare both our applications and our workforce to tackle the next computational challenges in weather and climate simulation," said Thomas Bogdan, president of the University Corporation for Atmospheric Research, which manages NCAR on behalf of the National Science Foundation. "It helps us conduct valuable, in-depth research on Intel architecture, and it underscores the value of working with industry in preparing for future technologies and training bright young minds in these fields."

The models that simulate climate and weather have an insatiable need for increased computing power, and as the physical models evolve, the computational algorithms must also keep pace in order to run efficiently at ever-increasing resolutions that provide enhanced detail. Importantly, preparing applications for the next generation of parallel processors and supercomputers will ensure a smooth transition when these systems become widely available.

The collaboration with NCAR and Intel provides an exciting opportunity for CU-Boulder graduate students to participate in research that will prepare climate and weather code for the next generation of Intel processors. Students will have the opportunity to collaborate with scientists on large-scale computational problems that have a real impact.

Thomas Hauser, CU-Boulder's Director of Research Computing, said, "This project will give me the opportunity to have students in the High-Performance Scientific Computing class work on projects that are connected to this effort with access to Intel's newest architectures." Research Computing at CU-Boulder is in the process of setting up a small cluster containing the Intel® Xeon Phi™ coprocessor, provided to CU-Boulder by Intel, in order to give students and researchers at CU-Boulder access to these new Intel architectures for porting and tuning their scientific applications.



NCAR's advanced research version of the Weather Research and Forecasting model (WRF) was used last year to simulate air flow in and around 2012's Hurricane Sandy. In this 3-D simulation of potential temperature, relatively cool air wraps around Sandy's core near the surface (purple and blue colors), while air parcels gain heat from moisture condensing into clouds and precipitation as they ascend through the storm's core. (©UCAR. Image courtesy Mel Shapiro, NCAR. This image is freely available for media & nonprofit use.). Video animations are available of this simulation and several others here.

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