Iowa High Performance Computing (IHPC) Summer School

June 1-3, 2011   University of Iowa
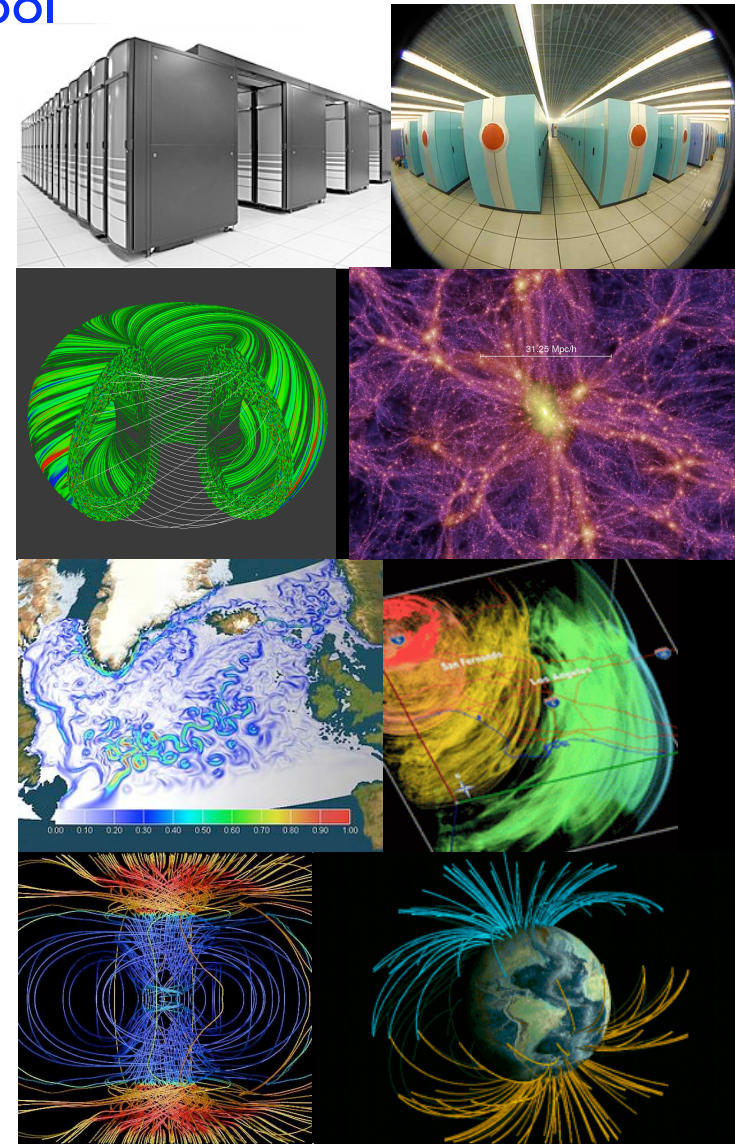
We are pleased to announce the third annual Iowa High Performance Computing (IHPC) Summer School. Participation in this free summer school is open to any University of Iowa graduate student in any field of study, with preference given to those planning to employ high performance computing as an element of their graduate research. Undergraduate students are welcome to apply and will be considered based on potential to benefit and space availability. Competency in scientific computer programming in a version of either Fortran or C is a prerequisite for this school, but familiarity with parallel programming is not required.

Course Description: The curriculum involves two important elements:

1) Three-Day Course, June 1-3, 2011: An intensive, three-day course of lectures on high performance computing and hands-on exercises, taught by the IHPC 2011 Faculty. This course will give students hands-on experience creating and running parallel algorithms, both locally on a shared high performance computing cluster at the University of Iowa, and remotely on computers at a national supercomputing center.

2) Summer Computational Project: Admission to the IHPC 2011 Summer School will be based on each student's one-page proposal for a summer High Performance Computing Project. The proposed computing project, endorsed by the student's own thesis advisor, involves the development of a high performance computing approach to the student's own research. Examples of such a project include: the parallelization of a serial code, the debugging of a parallel code in development, the extension of an existing code, or the optimization of a parallel code to improve scalability. Over the summer, each student will be provided advice on the computational aspects of the project by one of the IHPC faculty. At the end of the summer, each student will submit a five-page report describing his or her progress on the computational project.

Top IHPC Project Award: Based on submitted project reports, the winner will receive a certificate for the Top IHPC 2011 Project Award and a prize of $250.

For more information, please contact Professor Gregory Howes, gregory-howes@uiowa.edu

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Courses:

IHPC 2011 Faculty will teach courses on:
- The Basics of Designing High Performance Computing Algorithms
- Parallelization using the Message Passing Interface (MPI) Library
- Multi-threading using the OpenMP Library
- GPU Computing and CUDA programming
- Optimization of Parallel Performance
- Management of a High Performance Computing Research Program

Faculty:
- Professor Gregory Howes, Department of Physics and Astronomy, University of Iowa
- Professor William Dorland, Department of Physics, University of Maryland
- Professor Suely Oliveira, Department of Computer Science, University of Iowa
- Professor Christian Ott, Theoretical Astrophysics, California Institute of Technology

Date, Time, and Location:

IHPC 2011 Summer School
Wednesday, June 1st through Friday, June 3rd, 2011, 8:30am-5:30pm
Information Technology Services - Research Services
2523 UCC Training Room

To apply (two part process):
1) First, register to apply for the course at

http://its.uiowa.edu/apps/training/

2) You will then be sent application materials to fill out and return. These materials include a contact information sheet and a one-page description of your proposed summer high performance computing research project. These materials must be signed by both the student *and* the student's thesis advisor. Please submit all application materials by the May 18, 2011 application deadline. Enrollment in this course is limited to 16 students, so admission to the school is based on the computing proposal and the potential benefit to the student's graduate research program.

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