

## 2010 AAG ANNUAL MEETING

Call for Papers High Performance Computing for Geographic Sciences

Sponsored by: Cyberinfrastructure Specialty Group, GISSG, SAM SG

Abstract Deadline: October 25, 2009

Many geographic problems pose computational challenges originate from three aspects which include a) large volume of distributed datasets, b) complex analysis methods, and c) fast response needed by end-users. High Performance Computing is able to integrate enormous heterogeneous parallel and distributed computational resources and can therefore provide various potential solutions to the computing demands. However before geographic science problems can be solved by effectively and efficiently harnessing the heterogeneous and distributed computing resources, parallel and distributed processing strategies must be developed based on adequately assessing computational intensity to handle problems associated with communication, memory management, synchronization, and load balancing. In particular, domain decomposition and task scheduling are two primary strategies. Conventional high performance computing approaches to GIS and spatial analysis focus directly on decomposing spatial data structures and operations and utilizing them in specific parallel computer architectural implementations. There is an urgent need to investigate how HPC can be better utilized to address geographic science problems regionally and globally.

The High Performance Computing for Geographic Science session is to capture innovation in HPC technology to resolve geographic science problems and to promote advances in modeling methodologies and simulation. Topics of particular interest are, but are not restricted to:

1. Grid Computing & Cloud Computing
2. Large Scale Simulation/Prediction
3. Modeling of Geographic Science applications supported by HPC
4. Spatial analysis and processing supported by HPC
5. 3D or 4D Visualization supported by HPC
6. Parallel algorithms and methodologies
7. Load balancing, Middleware and task scheduling method leveraged for earth science applications
8. High Performance Software Tools

To present a paper in the session:

1. Register and submit your abstract online (<http://www.aag.org/annualmeetings/>).
2. Email your presenter identification number (PIN), paper title, and abstract to [qhuang1@gmu.edu](mailto:qhuang1@gmu.edu), [shaowen@ad.uiuc.edu](mailto:shaowen@ad.uiuc.edu), [qguan2@unlnotes.unl.edu](mailto:qguan2@unlnotes.unl.edu) by October 25, 2009.

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