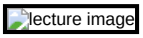

Special Guest Lectures

Computer Science Issues for Large Scale Applications

Dr. Gabrielle Allen, Associate Professor, Department of Computer Science
and CCT Assistant Director for Computing Applications

Coates Hall 256
September 22, 2006 - 01:30 pm

Abstract:
Complex problems in computational science, such as simulating gravitational waveforms from black hole coalescence or providing accurate and timely forecasts for severe weather events motivate a range of research areas in computer science. Such problems are driving the march towards petascale computing, where new hardware for compute, storage and networking resources, new algorithms, scalable, fault-tolerant, and science-enabling software, are all critical for advancing a new generation of applications. These problems are inherently multi-disciplinary, requiring new CS approaches to facilitate sharing of algorithms through abstract interfaces and interoperable components. Using example application areas important to the Center for Computation & Technology at LSU, this talk will detail a range of application requirements, and corresponding computer science research areas, for complex problem solving. I will describe how large-scale HPC (involving 105 processors) and grid (spanning continents) environments, including compute, network, and storage systems, are being developed. I will also show how these

Speaker's Bio:
Gabrielle Allen is Associate Professor in Computer Science at Louisiana State University, and the Assistant Director for Computing Applications at the Center for Computation & Technology. Gabrielle obtained a PhD in computational astrophysics from Cardiff University in 1993, following undergraduate degrees at in mathematics and theoretical physics at Nottingham University and Cambridge University. Before moving to LSU in 2003, Gabrielle was the lead of the computer science area of the Max Planck Institute for Gravitational Physics (AEI) in Potsdam, Germany where she researched and developed techniques for high performance and grid computing. At the AEI, Gabrielle was the lead of the Cactus Code project and a PI for the European GridLab project. At LSU, Gabrielle is involved in a number of large, collaborative projects involving computer science, scientific computing and the computational sciences, in diverse fields including petroleum engineering, coastal modeling, computational fluid dynamics, numerical relativity, computational chemistry and computational biology.

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