

National Institute for Computational Sciences (NICS): Education, Outreach and Training

Presented by

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User Support

National Institute for Computational Sciences



Education, outreach, and training mission

To keep the United States at the leading edge of simulation science by instructing and broadening the participation of a community of researchers poised to use leadership computing resources

- Internships
- Classes
- Workshops and Web resources
- Increasing participation
- Partner activities



Internships

Annual internships for undergraduate and post-graduate students to be co-located on the NICS site and work under the guidance of NICS staff and researchers in areas critical to all functions of a petascale facility:

- Computer science in user support and operations
- Future technologies
- Research activities with on-site users



Existing programmatic mechanisms bring nearly 1000 undergraduates, graduate students, postgraduates, faculty members, postdoctoral research associates, and others to the facility.

Introduce leadership computing education to students and researchers, incorporated in curricula offered by academic institutions:

- Classes and seminars on high-performance scientific computing
- Hands-on tutorials on porting and optimizing code for the NICS system
- High-impact educational and visual materials suitable for K–12




NICS will leverage partner education activities, such as the University of Tennessee's Interdisciplinary Graduate Minor in Computational Science.

Workshops and Web

Introduce specific HPC and technology to students and researchers to give them the skills and knowledge to run applications on petascale systems:

- SC08: “Introduction to Petascale Computing”
- “Petascale Laboratory for Simulation Science” in 2008.
- January 2008 Hands-on Workshop.
- Other topical workshops will be held on location at NICS or at partner institutions.



The screenshot shows the JICS (Joint Institute for Computational Sciences) website. The header includes the JICS logo and navigation links: Home, GaTech Lecture Series, University of Tennessee, ORNL, and Contact. A main banner features the headline "UT to build Powerful Computer with Grant" with a background image of server racks. Below the banner, there are sections for "Announcements" (listing dates from October 2007 to June 2008), "Events" (listing dates from October 2007 to April 2008), "Mission" (stating the university's goal to provide quality education and economic development), and "News" (with sub-sections for NSF funding, petascale awards, and ORNL selection). The footer contains logos for the University of Tennessee (UT), the National Science Foundation (NSF), and the Oak Ridge National Laboratory.

In general, seminars and workshops will be accessible via video on the Web. Extensive documentation will also be Web-based.

Increasing participation

Broaden the participation of under-represented demographic groups in leadership computing through planned partnership activities including

- “Introduction to Petascale Computing” workshop for the 2008 Grace Hopper/ Richard Tapia Workshops



ORNL's Research Alliance in Math and Science Program has paired hundreds of students from across the country with mentors in computer science for summer internships.

Partner activities

Our partners have very strong and multifaceted outreach activities at all levels, involve a substantial fraction of their science and engineering undergraduates in research, have very active Research Experiences for Undergraduates (REU) programs, and have substantial efforts at K–12 levels.

NICS will have a major impact on many of these activities by providing both educational materials and opportunities for direct involvement in the research of participating faculty.



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