



A **UT**/ORNL PARTNERSHIP  
NATIONAL INSTITUTE FOR COMPUTATIONAL SCIENCES



# Education, Outreach and Training

**James W. Ferguson**  
EOT Leader, NICS



# **Education, outreach, and training mission**

**To equip current computational scientists with the latest high-performance computing (HPC) techniques, as well as inspire prospective and new computational scientists through education and outreach. We do this through**

- Internships**
- Classes**
- Workshops**
- Increasing participation**
- Partner activities**

# Internships

**Annual internships for undergraduate and postgraduate 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.

# Classes

**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

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

- **Two quad-core Cray XT4/5 workshops in 2008**
- **February 2009 XT5 Hands-on Workshop**
- **Other topical workshops will be held on location at NICS or at partner institutions**

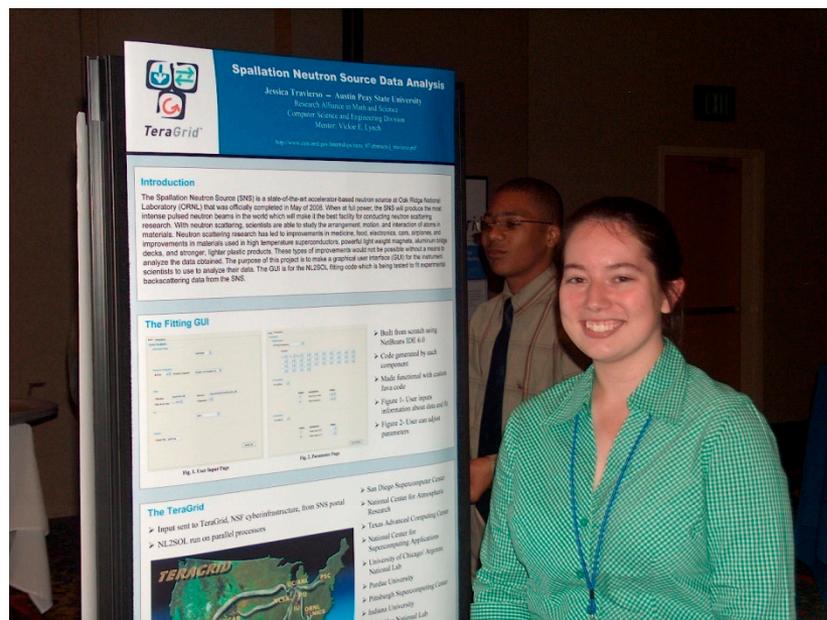


In general, seminars and workshops will be accessible via video on the Web. Extensive documentation will also be Web-based.

# Increasing participation

**Broaden the participation of underrepresented demographic groups in leadership computing through collaborative activities including**

- **“Introduction to Petascale Computing” workshop for the 2009 Richard Tapia Celebration of Diversity in Computing**
- **New HPC course at Morehouse College**
- **Outreach to schools of the Eastern Band of the Cherokee**



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. RAMS student Jessica Traverso of Austin Peay won the top student project award at the Teragrid '08 conference.

# Partner activities

**Our partners at Oak Ridge National Laboratory, the Teragrid Resource Providers, the University of Tennessee, and others have very strong and multifaceted outreach activities at all levels, and the schools involve a substantial fraction of their science and engineering undergraduates in research.**

**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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National Institute for Computational Sciences  
jwf@utk.edu**