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

Education Outreach and Training

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NATIONAL INSTITUTE FOR COMPUTATIONAL SCIENCES

OAK RIDGE

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**

Summer School Students
at NICS in July 2010

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

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 supporting classrooms**

Students from a UT-K computational methods class tour the machine room to see the hardware used in their class.

Workshops

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

- **Future Hex-core Cray XT5 workshops in January and February 2011**

- **Other topical workshops will be held on location at NICS or at partner institutions**

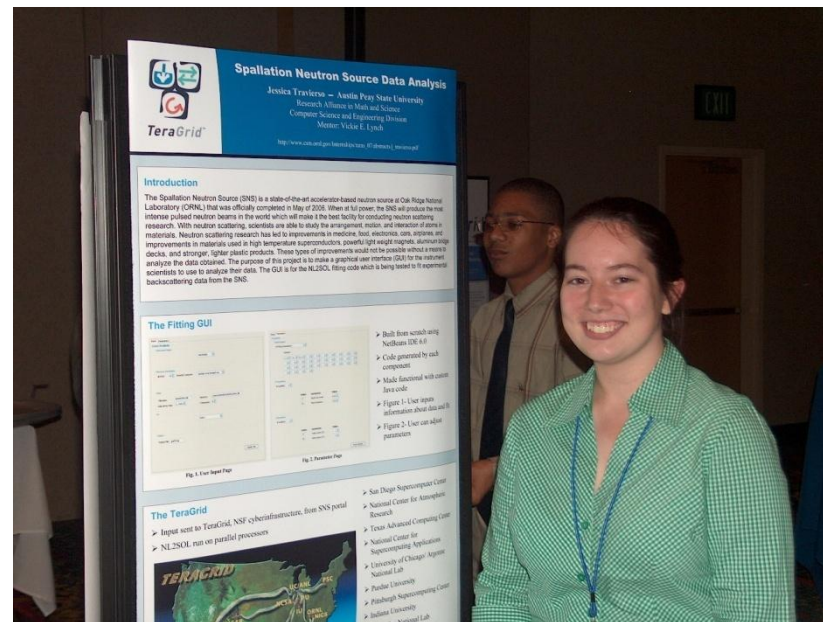- **Online asynchronous materials available, and more being developed**

NICS served as co-sponsor and organizer of two NIMBioS HPC workshops in 2009 and 2010 at the University of Tennessee–Knoxville.

Increasing participation

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

- **Sponsored students from South Carolina State University for the ORNL Research Alliance in Math & Science internship program**

- **Outreach to student chapter of the Society of Women Engineers at UT-K**

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 Travierso 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 has 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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