

Cyber Infrastructure Master Program at Kentucky State University

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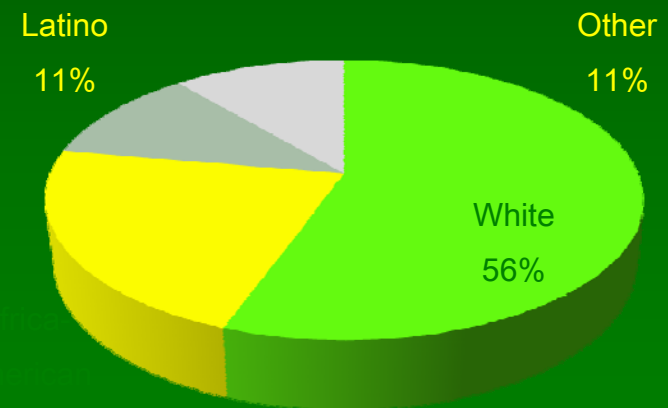
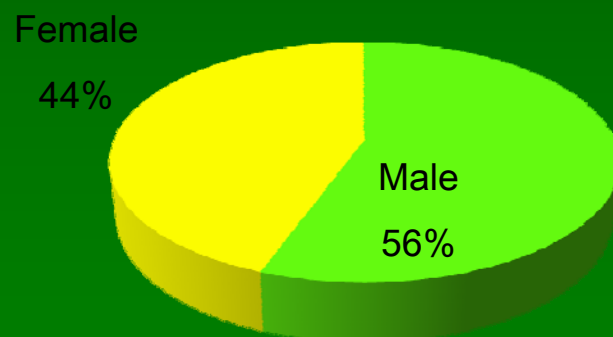
16th Annual KY EPSCoR
Conference, Louisville, KY

Cyberinfrastructure Graduate Program

- Has been three years
- Has many impacts on KSU community in
 - Student Learning and Research
 - Academic Growth in Computer Science

Students...

- Has supported eight graduate students and one undergraduate
- Average GPA for all: 3.90
- Diversity



Student Research

- **M. LaRue**, M. Beck and C. Shen, Collaborative Research: developing and implementing new capabilities in the Socorro planewave pseudopotential code
- **L. Urbina**, T. Webster, S. Bhattacharyya, and J. Ashley, Real time 3-D Visualization of internal conditions of Bee Hive
- **P. Wang, J. Green**, B. Kucera, D. White, M. Williamson, N. Jacobs, S. Bhattacharyya, 3-D Visualization of Kentucky Lake.

Student Research Cont.

- **W. Li** and C. Shen, *Multistep Sparse Matrix Strategy in Information Retrieval for Large Datasets*
- **J. Robert** and S. Bhattacharyya, *Network Centric Cooperative Autonomous Mission Control*
- **D. Cleland** and C. Shen, *A Science Gateway - MOWIC: Modern Web Interface for Cluster*
- **N. Lykins** and C. Shen, *GPU based K-Means for Large Sparse Data Structure.*

Outcomes

- Presenting their researches in some respective international conferences
- Getting summer internship at Dryden Flight Research Center – NASA, CA
- Joining Ph. D. program in computer science
- Being employed as a research scientist in HPC at Los Alamos National Laboratory

Academic Growth in Computer Science

- Graduate Enrollment
- Faculty Professional Development and Collaborative research
- Curriculum Changes

Total Enrollment



Faculty Professional Development

- Attended couple of conferences and training workshops
- Held two TeraGrid training sessions on KSU campus
- Involved in student research activities
- Participated grant writings

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Collaborative Research

- Establish collaborative researches with universities: University of Kentucky, Morehead University, UofL, Murray State University and Purdue University
- Students are trained in interdisciplinary areas

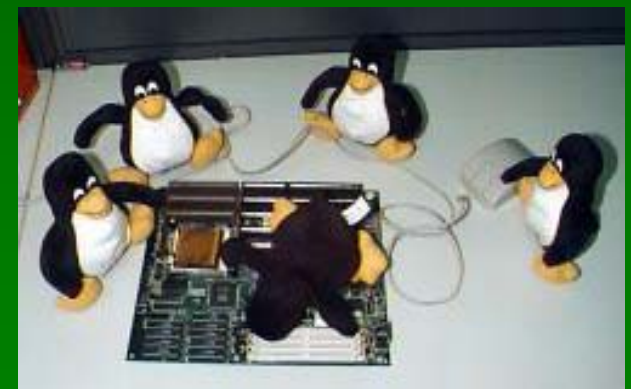
Research Lab

- Establish a Linux Lab with 18 cores Beowulf cluster and two robotics



Curriculum Changes

- Create three new courses
 - ◆ Linux Operating Systems for undergraduate
 - ◆ High Performance Computing for graduate
 - ◆ Robotic Simulation for graduate



Visit Us

Our website

<http://cscluster.kysu.edu>

Thanks...

- UK EPSCoR Office
- UK Center of Computational Sciences

- Let me brief introduce our cyber-infrastructure master program at KSU
- These diagrams show the diversity of this group of students in terms of gender and ethnicity

- Students have participated in many research activities. Most of them are collaborative research with professors at other universities.
- These students are doing their theses in these research topics. Dan has defended his thesis in last Dec. You can find his work through our website

- This program has been a huge boost to our students and our computer science program
- Faculty who engaged in this program also enhanced their research capacity by

- Those two organizations are great resources, and they do a great job in working with us to facilitate our research efforts. They are very supportive. This is a very rewarding experience!.

- enabled by cyberinfrastructure investments, seems excellent, with several students completing theses and faculty engaged. We met with students and faculty involved with this program and all spoke of the impacts that it has had, both on student training, and on the research culture at Kentucky State University.

offers and coordinates a mentored research program, the RSP, which has supported approximately 20 underrepresented students working in the four different EPSCoR theme

This program has been a huge boost to our students and our small program

- This has been a remarkable effort, both in terms of my professional development and that of my students.
- research-related experiences that should enhance their
- capacity and experience