Overview of Education and Outreach

Human Resource Development and Community-Building

Ken Kennedy

Rice University

http://hipersoft.rice.edu/stc_site_visit/talks/EducationOverview.pdf

Education and Outreach Programs

- **Major Focus:** increase participation of underrepresented minorities and women in science and technology

- Graduate Education
  - New courses incorporating Grid-oriented problem-solving
  - Exchange of graduate students across sites

- Undergraduate Education
  - New courses involving Grid topics
  - Undergraduate Research
    - Support communities to enhance retention

- K-12
  - Improve teacher training in IT
  - Pilot program on parent education

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Programs for Graduate Students

- **Goal:**
  - Develop a cadre of graduate students well versed in the intricacies of Grid programming and high-level strategies for conquering them

- **Strategies**
  - Projects courses on Grid programming at all institutions
    - Inter-institutional projects to construct applications
    - Results presented in seminars presented over the Internet
  - Academic course on Grid programming
  - Extended cross-institutional visits by graduate students
    - Work on a collaborating application

Graduate Students

- Past three years:

	Total	Yrs	Male	Female	US	Non-US
Masters	24	2.4	19	5	8	16
PhDs	20	5.9	14	6	13	7

	White	African-American	Hispanic	Asian	Other
Masters	10	0	3	11	0
PhDs	9	1	5	5	0

Undergraduate Programs

- Goals:
  - —To educate technical students more deeply in the fundamentals of computer science related to Grid programming and
  - —To convey better understanding of information technology to the general undergraduate population

- Strategies
  - —Promote graduate study among students of domestic (especially our own) institutions
    - – Focus on second-tier students who can be successful in grad school
    - – Target under-represented minorities and women
    - – Extensive use of support communities
  - —General Education Course: "Information Technology Architectures"

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Information Technology Architectures

- Designed as a "last" course in Information Technology for non-majors
  - Premise: you can understand the principles underlying information technology and distributed computer systems without becoming an expert programmer

- Topics
  - Computer Architecture
  - Networking
  - Operating Systems and Databases
  - Client-server designs
  - Computer Security

- Functional Approach
  - Understand how things work rather than how to build them

K-12 Programs

- **Goals**
  - To enhance the information technology literacy of students in K-12 and
  - To increase the number of students who subsequently pursue careers in science and engineering, with a particular focus on under-represented minorities and women

- **Strategy**
  - Build on Successful Programs of the Past
    - GirlTECH and TeacherTECH
    - Include material on "Information Technology Architectures"
  - Initiate new educational outreach program for parents
    - Convey understanding of the career opportunities in information technology

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