



U.S. Department of Energy's Office of Science

Advanced Scientific Computing Research Program

EDUCATION PROGRAMS

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Components

Advanced Scientific Computing Research Program

- **Undergraduate**
 - **Historically Black Colleges and Universities Program (HBCU)**
- **Graduate**
 - **Computational Science Graduate Fellowship Program (CSGF)**
- **PhD**
 - **Early Career principal Investigator Program (ECPI)**



Undergraduate Program HBCU

Advanced Scientific Computing Research Program

- **Goal**

- Develop and expand research and educational relationships with historically black colleges and universities (HBCU) and other minority educational institutions

- **Key Components**

- ORNL Research Alliance in Math and Science (RAMS)
- Directly Funded Universities
 - (4 + 3 additional proposals under review)

- **Funding History**

- Program has been growing
 - (FY04 \$0.4M -> FY06 \$1.6M)
 - FY 06 \$1.6M (\$1.3 directly funded universities and \$0.3M ORNL – RAMS Program)



Accomplishments and Future Plans for HBCU

Advanced Scientific Computing Research Program

- **Accomplishments**

- Twenty one students from predominantly minority-serving institutions successfully completed an 11-week Summer 2005 RAMS internship
- About 75% of recent RAMS participants from Fisk University, an HBCU in Nashville, Tennessee, went on to graduate school in computational sciences and engineering related fields

- **Future Plans**

- Expand the number of directly funded HBCU institutions



Graduate Program CSGF

Advanced Scientific Computing Research Program

- **Goal**
 - Ensure an adequate supply of appropriately trained scientists and engineers to carry out DOE's Mission in Computational Sciences
- **History**
 - 15 year successful track record
 - The fellowship provides support and guidance to some of the nation's best scientific graduate students, and these graduates now work in DOE laboratories, private industry and educational institutions
- **Funding in FY 2006**
 - \$5.5M (\$3.5M – ASCR; \$2.0M – NNSA)
 - 15 Fellowships awarded per year (410 applications received in FY 06)



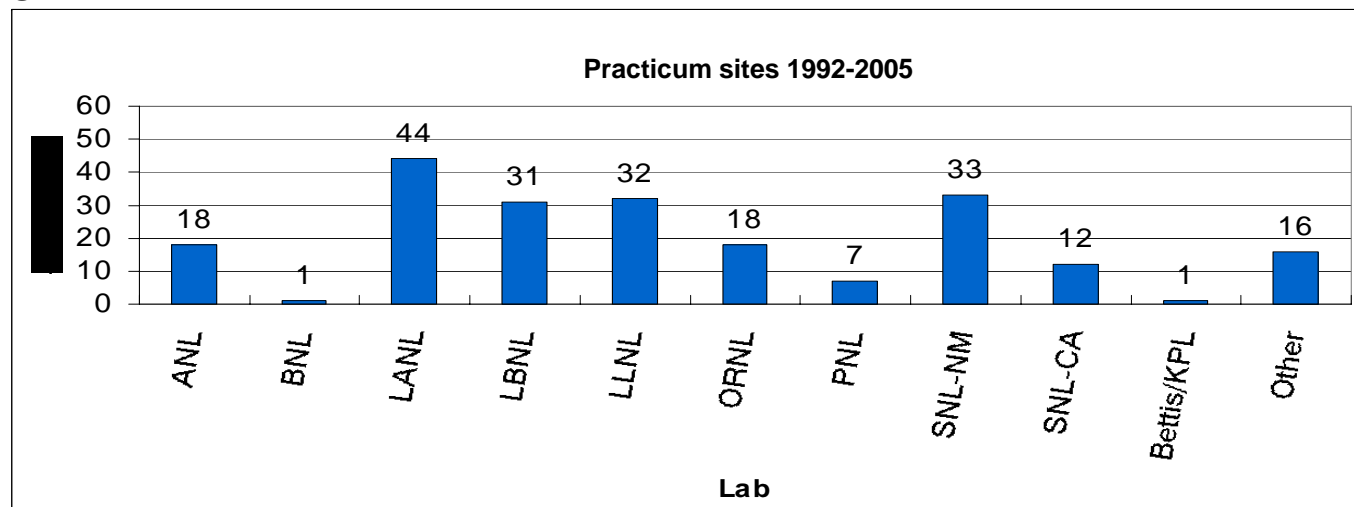
Graduate Program CSGF

Advanced Scientific Computing Research Program

- **Includes Practicum**

- Differentiates this program from other fellowships

- “The fellow made a number of contributions to the research program. Not only did she handle the design and implementation of the hybrid methodology, ***she also made key contributions to the basic algorithmic ideas that were central to the approach we used. I found her performance to be truly outstanding.***” – FY 05 Advisor





Accomplishments - CSGF

Advanced Scientific Computing Research Program

- **Accomplishments**

- The fellowship currently supports 64 students at 30 universities in 22 states
- Nearly 225 students at more than 50 U.S. universities have trained as Fellows, and the demand is only growing
- ASCAC notified Dr. Orbach that this program was a diamond
- Recognized as successful by NSF's Division of Mathematics
- Listed in National Research Council's 2000 report *Strengthening the Linkages Between the Sciences and Mathematical Sciences*



Future Plans CSGF

Advanced Scientific Computing Research Program

- **Future Plans**

- Fellowship Conference in June 20-22, 2006
- External Program Review scheduled for June 2006
- Send CSGF fellow to Lindau, Germany for the Nobel Winners lecture – June 2006
 - <http://www.lindau-nobel.de>
- Increased funding requested in FY 2007 to support increased stipends and more students



PhD - ECPI

Advanced Scientific Computing Research Program

- **Goal**
 - Support research in applied mathematics, computer science, and high-performance networks performed by exceptionally talented scientists and engineers early in their careers
- **History**
 - This is the fifth year of the program.
 - Identifies exceptionally talented applied mathematicians, computer scientists, and high-performance networks researchers early in their careers and assist and facilitate the development of their research programs
- **Funding**
 - \$2.6M in FY 2006
 - Average award \$100K



PHD - ECPI

Advanced Scientific Computing Research Program

- **Applications Received**

- FY02: 132
- FY03: 61
- FY04: 103
- FY05: 83
- FY06: 66

- **Accomplishments**

- ASCR Commended By COV for using ECPI program to increase the pool of talented investigators in computational sciences

- **Future Plans**

- External program review is scheduled for August 2006