

The Wayback Machine - <https://web.archive.org/web/19970101025032/http://sdsc.edu:80/GatherScatter/gsnov92/crashCo...>

SDSC CRASH COURSE FOR UNDERGRADUATE EDUCATORS

by Kris Stewart (Kris Stewart is associate professor of computer science at San Diego State University and SDSC senior fellow. She co-directs the SUE workshop with Dan Sulzbach, SDSC executive director.)

Like an excited group of summer campers, they came from all over the country for SUE--the Supercomputing for Undergraduate Education workshop. But they weren't kids; they were college professors from some 20 primarily undergraduate institutions-- from Maine to California--who came to SDSC in July for a one-week residential workshop (a real crash course) in supercomputing and how it applies to undergraduate education. They represented a variety of disciplines. Some you would expect, like computer science, mathematics, and physics; but some you wouldn't, like psychology.

The SUE workshop was designed to develop and disseminate a "template" undergraduate curriculum that faculty in a variety of scientific disciplines can adapt to suit the needs of their students and home institutions. The program focuses on the needs of educators who want to incorporate supercomputer use into their classes and departmental majors.

Designing a workshop for such a varied group of educators was not a simple task. While the unifying theme was undergraduate education, even this broad theme was sharply divided between courses being taught using primarily discipline-specific application packages and those focusing on programming techniques such as the coding care needed to make Fortran or C compilers deliver the full power of the supercomputer. On top of this, there was another division--some instructors would use vector machines like the CRAY Y-MP supercomputer but others would use parallel machines like the Intel iPSC and nCUBE 2.

To match the variety of faculty needs with the hardware and software available at SDSC, the SUE workshop included morning presentations by SDSC, CRI, Intel, and nCUBE consultants and open labs in the afternoons. From the morning lectures, the participants could recognize which consultant to meet with individually during the lab session.

Following the workshop, participants were given additional time on the CRAY Y-MP, Intel iPSC, or nCUBE 2 during the academic year to allow them to work with students at their home institutions as they apply what they learned at the workshop to curriculum development.

The attendees also received a set of hardcopy documents supplied by CRI and the SDSC EZ (easy) documents that introduce all facets of the SDSC computing environment. The workshop lecture notes, as well as the course notes from my San Diego State University undergraduate course in supercomputing, are available via anonymous ftp to [ucssun1.sdsu.edu](ftp://ucssun1.sdsu.edu). Files are [/pub/sdscinfo/ SUE- notes](ftp://pub/sdscinfo/SUE-notes) and [/pub/sdscinfo/Supercomputing-Course-Notes](ftp://pub/sdscinfo/Supercomputing-Course-Notes).

SDSC wants the participants to share what they learned at the workshop with teaching faculty at their home institutions and to take the materials one step further by customizing them for their students. As each participant's curricula evolve, they will make their associated course notes and laboratory examples available via anonymous ftp from [cs.sdsu](ftp://cs.sdsu.edu).

We see undergraduate curriculum development as an ongoing process and hope to keep in touch with and mentor the SUE workshop educators. Already, David Cook, of Lawrence University (Appleton, WI) and a participant in this year's SUE workshop, returned to SDSC in November to continue his work on curriculum development for physics courses.

The SUE program is part of a larger SDSC focus on undergraduate education in high-performance computing. In addition to the Research Experiences for Undergraduates (REU) program, SDSC also has undergraduate interns working on-site for academic credit, an REU program in visualization, and staff members with joint academic appointments at UC San Diego and SDSU who teach and collaborate on high-performance computing and scientific visualization classes.

For more information about the SUE workshop or any of the education programs, contact me via e-mail to stewart@cs.sdsu.edu.

