

Congruence with the Strategic Goals of the University

The OU Supercomputing Center for Education and Research will facilitate High Performance Computing in a manner that addresses a variety of education, research and technology transfer strategic goals of the University of Oklahoma.

Education Goals

Through the education plan outlined above, OSCER will address several of OU's education goals.

- OSCER will provide opportunities for students --- both undergraduate and graduate --- to learn to utilize cutting-edge technologies effectively to access, interpret and synthesize scientific information.
- OSCER will assist OU students in graduate research, thereby enhancing their ability to obtain advanced graduate degrees.
- By educating OU students in the use of these technologies, OSCER will prepare them to enter the HPC marketplace with up-to-date knowledge of the technological and scientific contexts in which their positions will be embedded.

Research Goals

OSCER will address several of OU's research goals.

- OSCER will encourage scientific investigations by OU students, faculty and staff, not only by providing HPC education and resources, but more importantly by fostering cooperative multidisciplinary research relationships. This latter goal will be achieved by facilitating research teams that include appropriate combinations of application scientists, computer scientists and mathematicians, and, where appropriate, by teaming researchers from multiple physical science and engineering disciplines.
- OSCER will assist OU researchers in obtaining external funding support for research projects in several ways:
 - The availability of on-campus HPC resources --- hardware, software, education and consulting --- will be a strong indicator to proposal reviewers that OU scientists' HPC-intensive research plans can be carried out effectively and efficiently.
 - OSCER will facilitate the establishment of multidisciplinary research teams, thereby addressing funding agencies' concerns that research proposals incorporate expertise not only in the appropriate application areas but also in scientific computing technologies.
 - Where appropriate, OSCER academic staff will participate in externally funded research projects, and therefore will assist in developing grant proposals that reflect the level of HPC expertise in OU's research community.
 - Successful execution of research projects that employ OSCER resources will cultivate a track record of scientific excellence that will enhance OU's reputation among funding agencies.

- The improved research climate at OU will help to attract highly qualified students, faculty and staff, thereby increasing opportunities for external funding proposals as well as rates of successful funding.

Technology Transfer Goals

OSCER is in a strong position to assist OU's research community in achieving its technology transfer goals, because, in many cases, a fundamental product of HPC-based research is scalable, portable, extensible, maintainable software that has immediate utility for industrial and/or governmental users. The recent transfer of numerical weather prediction software to Weather Decision Technologies Inc. is a case in point.

In addition, OSCER will assist newly formed companies that have been spun off from OU research efforts, by providing HPC resources under well-defined agreements of specified duration.

Outreach Goals

OSCER will assist in disseminating the results of OU's HPC-based research in the following ways:

- OSCER will assist researchers in developing publications of HPC-based research, especially in the aspects of such research that are about specific HPC technologies.
- OSCER will provide a centralized World Wide Web resource with links to electronic copies of publications, project descriptions, scientific visualization images and animations, and other products of OSCER-facilitated research.