Date: April 14, 2008

To: Mort Rahimi, Vice President Information Technology and Chief Technology Officer

From: Vicky Kalogera and Rex Chisholm, Research Sub-committee co-chairs

Subject: Building a Sustainable Research Computing Environment

The Research sub-committee has focused its attention on defining the best practices and approaches for building a sustainable research computing environment. Through the central and grant funded support of research computing Northwestern will be able to enhance its competitive edge and standing as a top research institution.

The sub-committee will submit recommendations on how Northwestern can best support research computing through the comprehensive assessment of (1) best practices for computing environments at competitive institutions, (2) current computational, storage, and network resource needs, (3) historical growth trends of the university, (4) resource renewal policies and cost-sharing opportunities through grants and central funding, (5) and proper build-out of research and innovation support staff.

To summarize, the Research sub-committee will be authoring recommendations that will center on the following key topics: assessment of research computing resource needs for the university, funding models and renewal policies for shared resources, and research/innovation support requirements.

Assessment of research computing resource needs for the University
For Northwestern to properly address the infrastructure (power, cooling, and space) requirements for a computing center this sub-committee will be providing a growth trend built from current and historical analysis of research compute resource usage. This model will be explicit in defining the scale of the resources Northwestern should plan on supporting during various stages of growth. This model will act a launching point to further discussions on requirements for a future datacenter for Northwestern and act as the basis for build out of funding and support requirements.

Funding models, renewal policies, and allocation policies for shared resources
The subcommittee will recommend the necessary policies and guidelines for sustained build-out and renewal of centrally shared resources (including computation and storage). A sustainable computing environment requires funding from both central and grant sources. This sub-committee is actively exploring how funding from grant bearing institutions will play a role in expansion and renewal of shared resources across the
university. Allocation policies will be defined in such a way as to promote use of shared resources but also maintain the competitive nature of the University.

**Research, Innovation, and Resource support requirements**
The subcommittee will recommend the technical support and expertise required to provide ongoing support and maintenance of the research computing environment and enable faculty to take advantage of its resources and services in addition to those provided by local, national, and international centers. The subcommittee will also recommend the types of services, seminars, and educational programs that will be required to support student and faculty training and collaboration in areas of optimization, parallelization, advanced media development, visualization, outreach methods, and interdisciplinary research.