

## **Research Computing Support Group**

Miami University's Research Computing Support (RCS) group was founded in the summer of 2005 with the goal of providing computational support for faculty research. It is part of the Academic Technology Services unit in Miami's IT Services organization. All four members of the RCS group have doctoral degrees and extensive experience in physical sciences, engineering statistics, and scientific computer programming.

The principal mission of RCS is to provide scientific and technical computational support to researchers at Miami University. The group's services are available to investigators in all fields and are provided at no cost to their clients. RCS members seek to relieve researchers of the burden of detailed computer work so that they can spend more of their time on science.

Some specific ways in which the RCS group helps investigators are:

- Programming needs – code development, debugging, optimization, porting, and conversion of code to parallel computing environments
- Software applications – recommendation, evaluation, installation, and instruction of third-party software applications. Also analysis and interpretation of results
- High Performance Computing – support use of Miami's HPC Cluster.
- Statistical consulting – statistical programming, advice on selection of techniques and software packages, assistance with data analysis, interpretation, and plotting of results
- Data management – data mining, analysis, search, collection, and storage
- Proposal support – grant writing, technical collaboration, improvement of proposal marketability

The RCS group also works closely with two other Miami University support organizations, the Statistical Consulting Center and the Center for Advancement of Computational Research, to help investigators with their work.

Another service that the RCS group provides is technical education and training. The group conducts workshops and tutorials on software topics and programs such as Unix, MATLAB, SAS and SPSS. Finally, members of the Research Computing Support group:

- Serve as undergraduate research mentors
- Belong to graduate thesis or dissertation committees

### **High Performance Computing Infrastructure**

Miami University has a high performance computing cluster that is can be used all researchers at the university. The cluster consists of 128 dual-node 3.0GHz EM64T processors. Each node has 4 GB RAM and 50 GB storage. The system has an additional 5 TB storage and a computational power of approximately 1.2 Teraflops. In addition to research usage, the cluster is also available to support courses taught at Miami.

The other major computational resource available to Miami University researchers is the Ohio Supercomputer Center (OSC). OSC is a statewide facility that can be used, free of charge, by any faculty member at an Ohio university to conduct his or her computational research. Two of the

RSC group members are site consultants for OSC and the RSC group provides computational support for Miami University researchers working on OSC systems.