

A Computer Laboratory for Numerical Analysis and Linear Algebra

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Grant Number: DUE-9451805

Our project (DUE-9451805) was to set up a computer laboratory for the instruction of both Numerical Analysis and Linear Algebra. With the funding received, we were able to set up a new lab, and augment another. The latter, which is open about 50 hours per week, now has 15 computers (10 originally), and serves as an open lab. It has adjunct faculty serving as proctors, answering questions, and helping students with various software. Another lab room, with 20 computers, serves as a classroom. It is our intention to use this room for as many of our courses as possible. A dedicated server connects the computers in both rooms, and ultimately connects to the outside world. Various software is available, including *Mathematica* and *Derive*.

These are the points we will cover in our presentation:

- Details of the physical set up and the management of the labs, as well as the problems we had to face in implementing the project.
- How the instruction of Linear Algebra, Numerical Analysis, and some computer science courses have benefited as a result of the labs.
- Classroom materials, homeworks, projects and sample student work from these courses. Also, sample Mathematica and Derive utilities that have been written for Linear Algebra and Numerical Analysis.
- Use of the World Wide Web to make these utilities available for everyone.
- The overall impact the availability of computers and software is having in our curriculum and our teaching practices.