2007 Unidata Equipment Grant:
Final Report for
"Upgrading SFSU's Weather Graphics and Simulation Laboratory"

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In June, 2007, the Department of Geosciences at San Francisco State University (SFSU) received a Unidata Equipment Grant for $15,770, with which we had proposed to buy eight 2.2GHz MacBook Pro laptop computers. These computers were to replace the same number of five-year-old Mac G4 Titanium laptops in a heavily used, hybrid classroom/computer lab. The Department of Geosciences provided funds to replace the other ten Mac G4 laptops in the room, two more in an adjacent room, and a Mac Xserve nearby. In other words, the Unidata Equipment Grant supplemented available Departmental funds to allow us to upgrade our classroom/computer lab in its entirety.

In June 2007, using the Department of Geosciences funds, we bought 10 new 2.2GHz MacBook Pro laptops and a Mac Xserve and installed them the following September. In December 2007, SFSU finished creating an account into which the Unidata Equipment Grant funds were transferred and we ordered the remaining eight MacBook Pro laptops. In January 2008, we took delivery of those machines and installed them in the hybrid classroom/computer lab, completing the upgrade of the computers in that room.

In the Spring 2008 semester, twelve classes in meteorology, oceanography, and geology were conducted in the hybrid classroom/computer lab. The classes had enrollments ranging from 4 to 45 students and totaled about 275 students. All of these classes used the new computers at least occasionally, and several classes (such as "Computer Programming with Applications in Meteorology and Oceanography" and "Quantitative Geology") used the computers almost every class meeting. Students often used the computers between classes as well.

Students used the computers during class sessions most commonly to access instructional exercises and resource materials via Web browsers, though students in one or more classes also used statistical analysis software ("JMP"), spreadsheet software ("Excel"), a Fortran compiler (g95), instructional software (notably Tasra's "Plate Tectonics"), Unidata's Integrated Data Viewer (IDV), other weather graphics software ("WXP"), the National Climate Data Center's NEXRAD radar data viewer, presentation software ("PowerPoint", for creating posters), and Google Earth. The new laptops were particularly important for the IDV, which the older Mac G4 laptops that were replaced by the new machines could seldom run adequately.

In Fall 2008, using a small grant from NSF, we will collaborate with an instructional designer (Alan Bol) from Cooperative Operational Meteorology Education Training (COMET) in Boulder, CO, and a cognitive psychologist with expertise in educational assessment (Janice Gobert) from Worcester Polytechnic University in Worcester, MA, to assess and evaluate aspects of how students use and learn from Unidata's IDV software. The computers funded by our Unidata Equipment Grant will be among those used for this project.