Instructional Equipment Replacement Allocation

Engineering instruction requires a complex set of laboratory space, electronic test equipment, fabrication facilities, computers, servers, software and professional engineering staff. As of December 2005, the instructional lab component of the Baskin School consisted of 10 instructional labs. These labs are operated and managed by the Baskin Engineering Lab Support (BELS) group under governance by the faculty Instructional Labs Committee (ILC). A list of these labs is as follows:

- BE-104 Digital Logic Lab
- BE-111 Signals Lab
- BE-113 Circuits Lab
- BE-115 Robotics Lab (new since December 2001)
- BE148 Laser/Optics Lab (new since December 2001)
- BE150 Advanced Digital Logic Lab
- BE161 Electromagnetics & RF Lab
- BE162 Semiconductor Materials Lab
- BE168 Networking Lab (new since December 2001)
- E2-592 - Advanced Networking Lab (new since December 2001)

Several additional labs will likely be established after December 2005. Instructional labs are in various states of planning or investigation include:

- Senior Projects Labs, two each
- Biomolecular Engineering Labs, two each
- Computer Gaming Lab
- Silicon Valley Center Lab

The School also has several specialized graduate computing labs which have been managed by computing staff and funded from the School’s computing budget.

Since December 2001, the four new instructional labs have been outfitted using equipment replacement funds, getting equipment grants and for the networking labs, receiving a gift from Cisco Corporation of $500K worth of equipment.

Note: Carolyn Hall to verify the budget numbers below.

In December 2001, total annual IER allocated to the School was $126,000; which is divided 60% for instructional computing infrastructure and 40% for the instructional laboratories. However with budget take back by the central campus, the Schools IER funds were reduced to XXXXX. Based on UC scheduled lifetimes of equipment, the lab manager (Robert Vitale) projected that (using December 2001 inventory) the School’s hardware instructional labs required an annual IER budget of $300-500,000 simply to replace obsolete. The annual equipment funding for the BELS instructional labs is $50,400, which is less than 15% of the estimated annual funding (in December 2001) needed to keep the labs current. Due to budget take backs, this funding is provided from a variety of School resources and not solely I&R.
Since the December 2001 estimate, four new labs have been developed while IER funding has stagnated or been reduced. The School planned to have a $2M reserve in 2005, for an end of life equipment replacement in 2010. A large pool of equipment purchased with the School’s initial complement funds will become end of life in 2010. Presently that reserve is zero as the funds were spent to develop the four new labs.

Given the new labs, zero reserve funds and wider-varied equipped labs, current funding is inadequate to keep the labs current and functional. A new estimate of $600-750,000 of IER funds is now needed to keep the current labs functional and operational. This amount will increase as the School initiates new labs for Biomolecular Engineering, Senior Projects and Computer Gaming. Therefore expanded efforts are needed to jointly increase total IER funding from campus and from gifts and grants.

Grants and gifts for replacement of broken and obsolete lab equipment are harder to achieve than those for new initiatives. Thus a significant effort is needed by the faculty, development office and lab staff, governed by the faculty instructional labs committee (ILC). Central to obtaining increased gift and grant support is having a full-time instructional lab manager and adequate laboratory staffing to support grant and development efforts.