Fund Raising
This memo proposes the acquisition of a CSD Laboratory for Teaching and Research; briefly discusses its uses; suggests a program of support for the acquisition; and sketches sources of support for its upkeep.

With the CSD building moving toward completion, the primary development goal of the department has shifted to facility development. The coming of the new building provides us with an opportunity, a focus for fund-raising, and a planning target. CSD is unique among the major computer science departments of the country in having no computer laboratory for graduate-level teaching and research generally available to all of its computer scientists. The personnel of the AI Lab use machines provided by ARPA for AI research; The Heuristic Programming Project uses a machine in the Medical School provided by NIH for application of AI techniques to medicine; all the other computer scientists scrounge time on various machines or do without. Systems workers, algorithm developers, and those who do experiments in computational combinatorics are examples of computer scientists who have no computer facilities at present.

In the remainder of this memo, I discuss the acquisition of a computer laboratory for CSD teaching and research. The laboratory would be used to teach all CS graduate level courses, those undergraduate courses in CS that require advanced types of software; and would be used by Ph.D. students doing theses and Masters Degree students doing their projects. It would be used for pre-thesis supervised research by graduate students, and for unsponsored research by faculty. Its use as a research facility would be largely sponsored by NSF support (see below). ARPA and NIH sponsored research in the AI area would continue to receive computer support on the existing facilities for that work. Our emerging facility development plan calls for the acquisition of a LOTS-like computer laboratory for computer science teaching and research. (LOTS-like means a DEC PDP20/50 system configured like the LOTS facility). We have studied many different alternatives; this one represents a conservative high-payoff route, employing a machine that Stanford has considerable experience in running and maintaining, with excellent software for CS teaching and research.
Such a system will cost $500,000-750,000, depending on configuration and discount. There is a scenario that will provide the necessary funding for acquisition:

1. An NSF proposal for facility development (due Dec. 1) requests $150,000. This is the maximum they will contribute. It is almost certain that we can get this money.

2. An H&S-CSD "package" of $150,000 is put together and presented to the Provost's office (see step 3). $75,000 of this represents H&S laboratory facility development funding; $75,000 is a loan from H&S to CSD, to be repaid over 3-5 years from Honors Coop earnings and from corporate/foundation fund-raising. Janet Kruse is already coordinating some fund-raising activities for us.

3. The Provost is asked to match the $150,000 of H&S/CSD funding with facilities money available to him.

4. We will seek an additional $150,000 from "partners", with whom we would share the machine (under some equitable sharing scheme). Possible partners are:

a. ARPA. ARPA has indicated "Maybe. Why don't you ask us to the suggestion that acquire more computing for their projects in CSD by becoming a partner in its acquisition and operation.

b. EE and the Digital Systems Lab. There is money available in their projects and industrial-affiliates funds to participate in a partnership.

c. Other H&S departments that are moving toward better computing resources, e.g. Statistics. None of these possibilities has been explored

d. Other non-profit institutions. The RAND Corporation's Information Science research program is interested. There is a good chance of finding a partner in this group.

e. LOTS. The university will be short of capacity on the LOTS computer by the time the CSD machine is acquired. Partnership is a way of acquiring more capacity of the same type in a not-too-expensive "unit", i.e. it is less expensive than buying another machine for LOTS.

In short, there are a number of different sources of support for a CSD computer laboratory--enough to lend credibility to the idea--but the key piece seems to me to be the H&S/CSD package.
The upkeep of such a laboratory involves maintenance, supplies, a systems programmer, and some student help for operations. The task is identical to that of running LOTS, and very similar to that of running the AI Lab machine or the Medical School machine. Major cost savings are available in upkeep if we adjoin our facility to one of those. With such an arrangement, the annual "upkeep" costs (if we pay our fair share) would be about $100,000. We would seek to meet these costs by:

Requesting that additional funds be put into our annual budget.

Using industrial affiliates program earnings.

Using departmental gift funds, and raising more (with the help of Janet and the GSO fund-raisers).

Sharing the upkeep costs fairly with our partners.

Epilogue

The proposed new computer laboratory will place an eminent department in a position of equity in facilities with the other major departments of Computer Science; will invigorate the teaching of Computer Science and the pursuit of scholarly research in Computer Science; will allow faculty and students to pursue certain lines of research that are not now attainable for want of facilities; and will promote the relevance of Stanford's Computer Science teaching and research to the real concerns of the computing world. When all is said and done, no matter how clever we are at abstract thinking about computing processes, it's hard to do Computer Science without a computer.