WHEREAS, The Instructional Advisory Computing Committee (IACC) has been asked to write a strategic plan to address instructional computing and information needs in the future; and

WHEREAS, The IACC has consulted with various interested faculty and staff on the contents of the strategic plan; therefore, be it

RESOLVED: That the Academic Senate endorse and support, in concept, the IACC "Cal Poly Instructional Computing Strategic Plan: A Networked Instructional Environment" while reaffirming the primacy of the faculty and the academic departments in determining instructional uses of computers.

Proposed by the Instructional Advisory Computing Committee
April 27, 1993
Revised January 25, 1994
State of California  
MEMORANDUM  

To: Jack Wilson, Chair  
    Academic Senate  

From: Warren J. Baker  
       President  

Date: March 28, 1994  

Subject: ACADEMIC SENATE RESOLUTION AS-420-94/IACC  

I am delighted to accept your endorsement and support for the IACC report entitled "Cal Poly Instructional Computing Strategic Plan: A Networked Instructional Environment." I urge the Academic Senate to continue to increase its awareness and participation in this developing feature of the academic landscape. Current and developing technologies will certainly continue to impact how we consider our role in the classroom and activities that support classroom instruction.
Cal Poly Instructional Computing Strategic Plan:  
_A Networked Instructional Environment_

In the next decade, computing technology will provide us with even greater teaching, learning, and research opportunities than it has in the last. For most instructors and students, the computing revolution of the last decade was symbolized by desktop computers: isolated machines loaded with word-processors, spreadsheets, graphics and computation programs. This first revolution is not complete: many of our faculty and students still do not have easy access to such machines, or the opportunity to learn to use them fully.

But the next computer revolution already is underway. Instructional computing in the next decade will be symbolized not by isolated desktop machines, but by communication between those machines, among office and office, classroom and library, teacher and student, the campus and the world. The next revolution will be less about the technology of computation than about access to information, and ways of sharing information. Consequently, the next revolution will involve most members of the University community, not just those who have been the traditional users and beneficiaries of technology.

With planning, Cal Poly can not only participate in the next revolution in instructional computing, but help lead it, to the great advantage of our students and faculty. Our plan centers on four major goals:

**GOAL 1: NETWORK.** A networked instructional environment, based on universal email, shared information resources, and computerized classrooms.

**GOAL 2: ACCESS.** Easy access to workstations and networked information services.

**GOAL 3: SUPPORT.** Institutional support for faculty and student development of computer-based communication skills.

**GOAL 4: SIMPLICITY.** Simplified interfaces, procedures, and documentation.

We do not envision achieving these goals all at once. Instead, we intend to proceed deliberately, with a careful eye on changes in technology that may change our goals, and on vicissitudes in the economy that enables them. Still, we feel that we must begin proceeding now toward a networked instructional environment if we are to deliver the sort of education our students will need as we move into the next century.

Achieving these goals will require coordinated planning and implementation at the departmental, college and university levels. We envision that Academic Computing Services, subject to review by the Instructional Advisory Computing Committee, will be the entity that coordinates instructional computing planning throughout the University.

Discussion of each of our four goals follows.
GOAL 1: NETWORK. A networked instructional environment, based on universal email, shared information resources, and computerized classrooms.

We intend to work toward a networked instructional environment. In this environment, every instructor and every student, working alone at his or her office desk, or with others in any campus classroom, will have access not only to the powerful tools of the desktop, but also to the networked applications and information resources of the entire campus, and the world beyond.

We envision students and faculty accessing the University's shared resources from network ports distributed throughout campus, in classrooms, laboratories, library facilities, and faculty offices. We envision them accessing shared resources from off-campus sites or residences. We envision every classroom being equipped with a large-screen display system into which instructors can plug their own portable computers, and through which they can display not only prepared lecture materials but also shared information resources.

We envision a University in which all faculty, staff, and students are connected through email. We envision vastly increased use of information services such as Cal Poly Network News (CPNN) and email, both to improve speed and convenience of communication and to save resources now devoted to paper and mail delivery. We envision that most written staff communication (memos, announcements, etc.) will occur electronically. We envision that many of the documents that pass between teachers and students (syllabi, "handouts," even examinations) will become computer-based. We envision instructors recording, calculating, and storing grades, and submitting them to the registrar, through an electronic gradebook that links with enrollment rosters and other pertinent student records.

We envision not only plain-text documents flowing between desktops, but multimedia documents, including color graphics, sophisticated formatting, interactivity, hypertext, animation, sound, and video. We envision instructors and students increasingly competent not only in receiving and reading multimedia and hypertext documents but in producing them.

We envision increasingly more powerful library retrieval capacity, including full text and multimedia retrieval to the individual user's desktop or to classroom display systems, with the ability to search and manipulate retrieved documents. We envision increasing desktop access to international journals, data bases, reference works, and scholarly discussion groups.

Using these electronic resources, we intend to create a new methodology for doing research and for publishing it, for creating and delivering lectures, and for interacting with students, not replacing the techniques of the traditional classroom but enhancing them.
GOAL 2: ACCESS. Easy access to workstations and networked information services.

We envision a campus community in which adequate, connected workstations are accessible to every student, faculty member, and staff member. An adequate workstation is one capable of receiving, processing, and displaying multimedia, including color graphics, sound, and video. Over time, of course, the concept of what is adequate will change. For example, we expect adequate workstations to become increasingly portable.

Faculty should be provided workstations as part of the ordinary instructional equipment they need for their jobs. Students should enter the University with an adequate computer, and with software sufficient for participating in their majors and in the campus electronic community. The policy which requires students to own computers also must include provision for a financial program enabling students to purchase computers.

Connections between faculty and student workstations will depend on the campus network, which will require additional file and application servers, additional storage, and improved performance, if it is to handle both an increased population of users and continually improving quality. Moreover, the physical process of connecting to the network needs to be improved, both from on campus and from off campus. To improve connections on campus, broad band connections must be supplied to faculty offices, most of which have only serial connections now, and to classrooms, most of which are not connected at present, and to many more study sites throughout the campus. To improve connections from off campus, in the short run, more modems should be installed, but in the long run, broad band links through telephone service need to be established.

Computer labs will continue to be a feature of the campus, but their nature will change. Since all students and faculty already will have adequate workstations, computer labs will provide for advanced, specialized, or particularly expensive hardware and software needed for particular disciplines or tasks. Coordination and management of computer labs will increasingly fall under the purview of Academic Computing Services, rather than individual departments or schools, so as to avoid duplication of effort and enhance efficiency of use.
GOAL 3: SUPPORT. Institutional support for faculty and student development of computer-based communication skills.

Part of the revolution we envision entails the installation of hardware and software, but even more of it depends on motivating and training the members of the academic community. We envision that the responsibility for learning and teaching the skills necessary to use the new research, writing, and presentation tools will increasingly be recognized not as the special duties of a few instructors or a few academic departments, but as part of the regular duties of the majority of instructors and of all departments, across the curriculum. We will all be using computerized classrooms; we will all be communicating through email. But most faculty members do not have these skills now, and often the time and effort required by their other professional obligations prevent them from obtaining these skills.

The speed and scope of change in instructional methods promised by the new technology is unprecedented in educational history, and will require unequivocal institutional support. No graduate school yet teaches what we expect our faculty to achieve. For many of our colleagues, the initial learning curve will be dauntingly steep, and advantages of undertaking the task unclear. We cannot expect that faculty will be able to upgrade their instructional computing skills on the scale we envision without institutional assistance—not just through special grants or pilot programs but through regularized, ongoing, easily accessible mechanisms.

To meet the unprecedented need for motivation and training, we envision a clear institutional policy that encourages the individual faculty member to make the required investment of time and effort. This policy should provide incentives for faculty development, including, for example, release time or direct pay to implement training seminars for other faculty, and release time or direct pay to attend such seminars. This policy also should explicitly regard improvement of an instructor’s instructional computing skills as useful and appropriate professional development worthy of consideration during the retention, promotion, and tenure process.

Besides providing opportunity for basic training, the university should support innovative, advanced faculty projects—particularly those designed to enhance or improve the utility of new technologies within the teaching, learning, and research processes.
GOAL 4: SIMPLICITY. Simplified interfaces, procedures, and documentation.

The system must be simple and easy to use. Students, faculty and staff should have simple, intuitive, and uniform access and interfaces to information resources that enhance teaching and learning, research, professional development, and communication. They should have simple networked tools which allow them to work through the bureaucratic processes of the university, such as registration and grading, with a minimum of frustration.

We recognize that one of the most burdensome impediments to our plan for a networked campus is that not all current systems are “user-friendly,” and that the multiplicity of systems now on campus requires users to learn many different interfaces and command sets. To help remove that impediment, we envision a conscious, cooperative effort by administration, staff, and faculty to demystify computer use by discussing it and documenting it in plain English, not in jargon and acronyms. We envision a conscious, continuing effort by Information Systems personnel to simplify and standardize interfaces between people and machines. We envision an explicit policy of procurement and growth which holds consistency and ease of use to be as important as computing power.

To some experienced users this need to simplify language and interface may seem trivial, or of secondary importance, but it is not. Without it our effort to spread the advantages of instructional computing throughout the university will surely fail. Realizing, however, that complex technology will always present some difficulty, we envision a growing role for Academic Computing Services as an expert consultation service for faculty and students.