1. CALIFORNIA DIGITAL LIBRARY

President Atkinson observed that the University of California campuses and the three national laboratories have been leaders in the evolving world of digital technology. There is a wide range of activity in research related to the use of digital technology in instruction, and virtually every student has access to electronic mail. The College of Letters and Science at the Los Angeles campus provides a home page on the World Wide Web for every class. The President explained that another major step is the California Digital Library initiative. Through this initiative, UC will harness the power of digital technologies to make its unique library and information resources more widely available to all Californians, as well as provide leadership and support to other segments in order to enhance access to digital information resources throughout the state. In addition to providing valuable new services to the people of California, the California Digital Library will enhance library service to UC faculty and students while supporting the library system during its transition to the digital future. In discussing the proposal for the digital library, the University’s librarians recommended that a new position of University Librarian and Executive Director of the California Digital Library be established. The President reported that Mr. Richard Lucier has been selected to fill that position.

Provost King introduced Mr. Lucier, who has been University Librarian and Assistant Vice Chancellor for Academic Information Management at the San Francisco campus. For the past thirteen months he has served as Special Assistant in Library Planning for the Office of the President.
Mr. Lucier recalled that over the last decade, the combined effects of reduced budgets, exponential increases in the amount of published information produced annually, and significant ongoing inflation in the costs of acquiring library materials have seriously eroded the ability of the University’s libraries to support adequately the University’s academic programs. At the same time, rapid advances in information technology promise enormous improvements in the capability of academic libraries to acquire, store, manage, and deliver the published information needed for teaching and research. The size of the nine-campus UC library system presents unique opportunities to use networked information systems and to share the benefits of new library technology on an intersegmental and statewide basis. Recognizing both the problems and the opportunities, the University initiated a major planning effort in 1995, the Library Planning and Action Initiative, to develop and implement strategic directions for the UC libraries over the next five to ten years.

For the foreseeable future, electronic information resources will complement traditional collections, which will continue to be essential for the support of teaching and research. As a result, the University must maintain and enhance existing collections in parallel with the development of digital library services. Effective use of technology for digital library services also will require substantial new investments in equipment, network infrastructure, software, and training. These investments will bring returns quickly in terms of educational and research quality but more slowly in terms of relief for traditional library materials budgets. Technology alone will not satisfy the University’s library and information service needs. Continued investment in traditional collections, services, and facilities will be needed to sustain the world-class libraries that are required to maintain UC’s academic quality. As part of the University’s overall strategy to sustain and develop its libraries, the California Digital Library will complement and enhance the existing University library system and its rich collections.

Mr. Lucier reported that the University envisions a library system that can blend print and digital capabilities to support its academic programs, serve California’s citizens, support business and industry, and forge new collaborative links with other segments of California education. As the centerpiece of a strategy that will help to achieve this vision, the California Digital Library provides a means to make the vast information resources owned by UC available to a wider community, but it also does much more. A concept of this scope cannot be achieved by the University alone. The CDL also makes it possible for UC to provide leadership and support to the other great educational and library institutions in California in order to organize and provide access to the rich digital information resources of the entire state. The University is in discussion with potential partners, including the California State Library, the California State University, the University of Southern California, Stanford University, and the leaders of the California library community.

Continuing rapid developments in information technology, coupled with uncertainty about the characteristics, requirements, and costs of digital publications, will make the library planning environment fluid for at least the next decade. Notwithstanding this uncertainty, the
University cannot let collections continue to deteriorate while waiting for these issues to be resolved. Instead, the University is adopting strategies that will guide its libraries through the transition to the digital future while promoting and sustaining the integration of traditional and digital library collections and services. During this transitional period, the organizational, financial, and technological changes needed to ensure the continued viability of the University’s libraries will be identified and put into place. These strategies include:

- Enhancement and expansion of library resource sharing capabilities;
- Continued support for building traditional collections;
- Creation of a single statewide digital collection to serve the University’s common information needs;
- Expanded collaboration within the University and with other segments of California education, other State agencies, and the private sector;
- Continued deployment and upgrading of the network infrastructure needed to support digital libraries, teaching, and learning technologies, and other essential operations and services;
- Support for efforts to transform scholarly and scientific publishing and communication and control the increase in cost of published scholarly information; and
- Ongoing, intensive planning.

Mr. Lucier explained that, as an integral strategic component of the library system and a collaborative effort of all nine campuses, the California Digital Library comprises a number of key elements that support and sustain the University’s teaching and research mission:

- High-quality electronic knowledge resources;
- Personal communication tools to create, share, manipulate, store, and use information;
- An effortless network interface for dissemination of and access to the world’s knowledge; and
- Distributed services integrated with information resources and on-line tools.

To accomplish this, the CDL will license, acquire, develop, and manage electronic (digital) content in support of campus academic programs, facilitate access to the collection, support digitization of paper-based material, establish policies and procedures for archiving digital content, encourage and support electronic publishing by faculty, and assist campuses in providing user support and training. The initial focus of the CDL will be on the information needs of UC students and faculty, for whom it will provide access to digital information, relieve pressures on print collections, and develop mechanisms to foster sharing of collections among the nine UC campuses. Ultimately the CDL will build the partnerships that will allow the University to deliver information to all Californians. As other entities, such as the California State University, leading private institutions such as the University of Southern California, and private corporations become partners, electronic collections will be enriched and sharing mechanisms strengthened. The Library of California bill would create a network of public, private, industrial, and university libraries across the state. The University of
California has agreed to serve in a leadership role in this undertaking, which will provide easy access to information to all of the citizens of California. A demonstration project is under development in collaboration with the Library of California and the California Library Association which will provide access to digital materials in three locations, the San Francisco bay area, the San Diego region, and the Fresno area. The environment has been chosen as a subject that would be of interest to people in those regions.

A joint task force comprised of representatives from the University of California and the California State University has presented to the President and the Chancellor an agreement between the two systems which proposes inter-operability among the systems, joint licensing agreements, strengthened resource sharing, cooperative programs for user training, and support for regional initiatives.

Mr. Lucier reported that a partnership between the University’s faculty and students is represented by Interlib, a cooperative project among the California Digital Library, researchers at the Berkeley and Santa Barbara campuses, Stanford, and the San Diego Supercomputing Center. Basic science researchers will develop new software and tools which the San Diego Supercomputing Center will translate into production systems to be moved into the CDL.

In order to implement the initiative, the University is proposing a partnership with the State to finance the $4 million annual cost to begin development and operation of the California Digital Library. The 1998-99 budget plan calls for $3 million in State general funds to be matched with $1 million in UC funds for this purpose. Given the importance of the digital library, the University is investing its own $1 million share beginning in the current fiscal year in order to take the necessary first steps immediately.

The first shared electronic collection of the CDL will be the Science, Technology, and Industry Collection, covering a literature that accounts for over eighty percent of the published electronic material now available. Choosing a collection focused on science and technology will permit the University to achieve economies of scale when accessing the highest-cost literature, establish a digital collection with the critical mass needed to investigate a variety of issues relating to scholarly and scientific communication, create a resource that will encourage collaborative activities with the private sector, and relieve the campuses of the need to provide additional support for the development of these digital collections.

While shared electronic collections will be an important focus for the CDL, they represent only a small fraction of published material. For the foreseeable future, print collections will continue to be important to the teaching and scholarly activities of University faculty and students. A key role of the CDL is to coordinate the technology and planning across campuses that will support systems which facilitate expeditious access to printed materials from users’ desktops. To create a single common library for the University, all materials, regardless of format and location, must become easily accessible. Systems and policies must
permit users to request materials from any campus as easily as they can from their local collection. The UC libraries can then develop an appropriate mix of shared systemwide collections and locally purchased materials.

The California Digital Library offers not only the capability to access published information in new ways but also the ability to explore innovative methods to create, capture, and communicate the new knowledge created by UC research and scholarship. The University has begun to explore the capabilities of the CDL as an "electronic publisher" that could provide faster, cheaper, and more effective communication of UC research to education, industry, and the general public. This includes examining the potential of digitizing UC-owned material appropriate for the Science, Technology, and Industry Collection and studying the costs and benefits of alternative methods of acquiring, publishing, and storing large amounts of UC-generated digital content. The University plans to put those systems and services that have proven successful into production as part of the development of the CDL.

Mr. Lucier outlined some ongoing challenges, including the area of information policy. Copyright policy is under review by the Congress, including the “fair use” provision which allows educational institutions to use copyrighted materials for research and education free of charge. The publishing community and the entertainment industry are interested in removing this fair use provision, which would have a significant impact on the University’s ability to make knowledge available. UC has taken a leadership role nationally by developing a set of principles that has been adopted by the National Endowment for the Humanities and others.

In response to a question from Regent Leach, Mr. Lucier explained that the first stages of the digital library will be built using systems which currently exist, such as MELVYL, but that over time new technologies will be required. In addition, a large investment in network infrastructure will be needed on the campuses.

Regent Leach asked whether the CDL would be available to users for commercial purposes as an act of public service. Mr. Lucier expected that every segment external to the University would be asked to support the library. The Library of California legislation, if approved, could provide a source of funding.

In response to a comment from Regent Montoya regarding the University’s role in disseminating scholarly research, Mr. Lucier noted that World Wide Web technology will facilitate the ease by which the faculty can publish their research. It will be necessary to develop a mechanism which will provide for peer review in that environment. There is a national committee of the Association of American Universities which is chaired by President Casper of Stanford that is developing methods to do so. Provost King added that faculty members post immediate research results on their home pages.
Regent Lee pointed out that it is easy to download material that is in digital form and asked how the digital library would prevent that from happening. Mr. Lucier explained that the University is exploring a common authentication system across the nine campuses which would provide access to faculty, staff, and students. In the future the digital library will be expanded to include other users.

Faculty Representative Weiss reported that the University’s libraries have been in the forefront of the faculty’s concerns over the past five years and that the faculty fully support the creation of a digital library. She believed that resources would need to be devoted at the campus level to assure that faculty and students will be able to access the digital library. She suggested that while science and technology are appropriate for the charter collection, the social sciences and humanities are trusting that their needs will also be addressed in the future. Regent McClymond added that the digital library will greatly facilitate research and will thus enhance the University’s ability to recruit and retain faculty.

To conclude his presentation, Mr. Lucier demonstrated material from the digital library which will be available online in 1998.

2. THE ROLE OF UNIVERSITY EXTENSION IN THE MISSION OF THE UNIVERSITY

Vice Provost Tomlinson-Keasey reported that more than one hundred years ago the University of California offered its first Extension courses in English, history, mathematics, and philosophy in San Francisco. Since that time, University Extension has grown into one of the largest continuing education providers in the country, with a breadth of learning opportunities and a reach across the state unparalleled in continuing higher education. In the past three years alone, the eight Extension divisions have offered over fifty thousand programs with one million enrollments.

Although the unique identity, mission, and consequent program focus of each Extension division reflects its campus history, locale, and the needs and expectations of its clientele, the eight Extension divisions have a great deal in common. All embrace the basic purpose of University Extension, which is to improve the economic, intellectual, and socially responsive competencies of the citizenry and to help the University be an instrument of community life.

All Extension divisions seek to accomplish the following goals:

- To address the career needs of adult professionals by helping them understand the explosion of new information and technology, making possible job advancement and career training;

- To enhance the intellectual and cultural life of Californians, providing programs in the sciences and in the liberal and fine arts;
• To expand awareness and understanding of public issues affecting the nation and the state;
• To assist people in examining the political, sociological, and psychological dimensions of individual, family, and community life;
• To provide opportunities to help students make progress toward a degree by offering transferrable, degree-credit courses;
• To provide students with the necessary study skills to be admitted to and succeed in colleges and universities;
• To facilitate collaborative programs and activities between the campus and the community; and
• To disseminate the most current University research and scholarship.

In addition to a shared purpose, Extensions share a common approach to providing continuing education and lifelong learning that can be characterized as flexible, dynamic, entrepreneurial, and market focused. They are self-supporting operations, organized in a manner that allows them to respond quickly and in a targeted manner to the wide-ranging needs of the people of California. They build and rebuild networks that link the resources of the core of the University with individuals and organizations across the state, the nation, and beyond. Although there is some variability by region, they also have a similar clientele which can be described as employed adult learners who have already earned at least a bachelor’s degree and are between the ages of 24 and the early 50s. Men and women participate in Extension offerings in roughly equal numbers. Over the years, Extension’s clientele has been largely white, but this is changing, particularly in programs targeted to specific communities or professional sectors.

One of the hallmarks of University Extension is the strength and diversity of its academic programs. University Extension has built its reputation on high-quality, rigorous curricula and on alternative forms of study, including professional development courses and programs, undergraduate education programs (degree-equivalent study), and cultural enrichment and public service programs (noncredit courses and programs). All Extension divisions offer all three types of courses and programs, although the proportion of particular types may vary.

**Professional development courses and programs** -- Extension has increasingly focused its efforts on professional education, both professional certification and professional continuing education. Professional development courses and programs currently account for almost sixty percent of Extension’s portfolio statewide. This segment of the curriculum has seen the most rapid growth in the past three years. Of particular note within the category of professional
development courses are the large number of certificate programs, which are sequential offerings that constitute Extension’s discrete academic curricula and form a large portion of the basis of Extension’s identity among working professionals. Currently there are over 380 certificate programs offered across the eight Extension divisions. Most sequences have a clear applied professional focus and have implicit or explicit ties to one or another career fields. Examples include programs in Hazardous Materials Management, Land Use and Environmental Planning, Software Engineering, Creative Writing, and Transportation Demand Management.

**Undergraduate education programs** are a notable characteristic of UC Extension, although the overall number of these programs is smaller than the professional and noncredit programs. Various kinds of undergraduate degree credit courses are available through University Extension. These include regular campus offerings that are available on a space-available basis and Extension offerings that are either replications of existing UC campus courses or structured as undergraduate classes but whose content is not found in an existing campus offering.

**Cultural Enrichment and Public Service Programs** -- While University Extension offers curricula that address the needs of professional communities and matriculating students, it also has built a reputation for excellence in programs for intellectual enrichment. Drawing from the rich pool of talent on its campuses, Extension explores history, literature, and the arts in traditional and innovative ways. In addition to classes, Extensions organize lecture series, summer institutes, public affairs forums, and other events for the general public and special constituencies.

Flexible study formats are often cited as one of the reasons for the success of Extension programs. Recognizing the diverse learning needs and circumstances of its constituency, an array of formats have been designed, including contract training, the short course format, curricula offered abroad in English and native languages, and, most recently, courses offered on line and through other forms of mediated instruction.

Contract programs are in-house training and development programs developed for and delivered to government and industry clients. These programs are customized programs that reach into leading industries and corporations including TRW, Disney Imagineering, PG&E, Kaiser Permanente, Bank of America, and Pacific Bell.

Soon after the Second World War, UCLA Extension, in concert with the School of Engineering and Applied Sciences, introduced the short course concept to continuing education nationally. The concept was to condense what might usually be two or three semester units of instruction and offer, in a residential setting, a post-graduate course for practitioners over the span of one week or ten days. The concept has been widely imitated throughout the country and is still a part of University Extension’s programming.
Many of Extension’s continuing professional education programs have a more general informational thrust than do semester or quarter-long classes, certificate programs, or even short courses. These more general programs often take the form of one-day programs or conferences. UCSB Extension’s one-day seminar on California water law, “Managing California’s Liquid Gold,” is an example of such a one-day program. This seminar included supervisors, mayors, and other important decision makers, as well as the head of the State water program.

Extension’s curriculum is offered in all parts of the world in English and often in the language of the country. Programs on topics such as civic advocacy and nonprofit organization management have been presented to Russian officials both in Russia and in Riverside, with simultaneous translation into Russian. Davis Extension designs and delivers short-term technical training overseas. One such effort, to help a large irrigation district in central Morocco achieve greater water efficiency, was taught in French. UC Berkeley Extension, working jointly with a South American partner, has developed and presented a ten-day residential management development course in the Spanish language in Santiago, Chile for thirty mid-level younger managers. This intensive course covered marketing, finance, human resource management, and leadership. The instructors are all U.S. citizens who are fluent in Spanish.

One of the areas in which University Extension has been on the leading edge has been in the area of on-line instruction and other forms of distance learning. In 1995-96 alone over 400 courses and programs were offered using distance learning technologies.

UC Extension is a leader in its approach to advancing knowledge and societal solutions by leveraging networks of professionals, governmental policy makers, and other stakeholders. Extension approaches the task of building links by functioning as a convener or facilitator among various groups on important public issues. Below are a few examples of the joint endeavors initiated by Extension.

CONNECT, the internationally-recognized model of creative synergy at San Diego Extension, marries the needs of high-tech industries, business services providers, and the University. Executive Development programs for scientists and engineers, for physicians, and for school principals, emphasize leadership issues focused in each profession’s environment.

The San Diego Dialogue is a cross-border research and policy program addressing the economic and community development issues facing the San Diego-Tijuana region.

Common Ground, the Center for Cooperative Solutions at Davis Extension, connects multiparty natural resource management and policies constituencies with University research resources and information technology support and offers neutral facilitation in projects involving diverse perspectives. Successful projects have included the Sustainable Regional Landscapes projects in the Central Coast and Northern Sacramento Valley and the Malibu Creek Watershed mediation in the Santa Monica Mountains.
The Center for Orange County Regional Studies, located at UCI Extension, integrates UCI scholars with regional business, science, religious, governmental, medical, arts, media, and other leaders to investigate and develop a body of knowledge to address issues, plans, and options for one of the fastest growing economic regions in the United States.

UCLA Extension's Public Policy Program engages diverse groups to address issues such as growth management, governance, and fiscal reform, in the process of creating an exchange network that serves public needs and improves the value of and access to research. Its annual Arrowhead Conference, for instance, is unique in bringing together stakeholders from the Federal Highway Administration, Natural Resources Defense Council, American Automobile Association, Kennedy School of Government, Union of Concerned Scientists, USC, EPA, UC Irvine, Hughes Aircraft, UC Berkeley, and 16 other constituencies to address critical, cross-cutting issues in transportation, air quality, and land-use policy.

Vice Provost Tomlinson-Keasey introduced the panel of speakers for the presentation on University Extension: Dean Mary Metz, UC Berkeley Extension; Ms. Elizabeth Fetter, Vice President of Pacific Telesis; Dean Robert Lapiner, UCLA Extension; and Mr. Frank Foster, Senior Vice President at Sony Imageworks.

Dean Metz observed that California has the nation’s highest concentration of information-age, high-technology, and communications companies. These rapidly growing and changing industries are fueling the economy of the State and represent why the State is outpacing the country in new business formations and exports. These industries require continuously trained employees, and they exist in a knowledge-based economy in which education is essential. Continuing education is imperative in today’s society, and University Extension is striving to provide that public service to the citizens of the State. Dean Metz reported that Ms. Fetter first used UC Berkeley Extension’s Partnership for Professional Development when she was President of the Industry Markets Group for Pacific Bell. At that time, the telecommunications industry was undergoing rapid change due to deregulation, and Ms. Fetter wanted to ensure that her employees would be able to perform in a competitive environment. In May 1997, following the merger of Pacific Telesis and SBC Telecommunications, she became Vice President and General Manager, Operator Services. Ms. Fetter serves as a member of the UC Berkeley Extension Advisory Counsel and has taught in the UC Berkeley Executive Management Program.

Ms. Fetter explained that the telecommunications industry has changed more in the past five years than in the previous fifty, which has caught many of Pacific Bell’s 50,000 employees in California with skills and training that are ten to twenty-five years old. The challenge is to retool the workforce in a rapidly changing environment as well as to create an ongoing program of professional development that also will help to attract both entry-level workers and people in high-demand fields such as computer programming. Ms. Fetter noted that the challenge which industry leaders face is to attract and retain employees with the necessary
skills. In the last 18 months, Pacific Bell, in concert with the Partnership for Professional Development, has presented courses in twenty subject areas, including accounting, contract management, leadership, human resources management, marketing, and telecommunications technology. Ms. Fetter recalled that in 1994 the telecommunications industry faced fundamental changes. She was charged with developing a strategy for opening up Pacific Bell to local competition as well as setting up service centers and hiring thousands of employees.

She approached Extension about putting together a certificate program in the marketing and new product development areas to help to understand how a company in a rapidly changing environment becomes competitive. Several hundred managers went through the program, with enormous success. Ms. Fetter stated that she viewed the partnership that Pacific Bell developed with UC Berkeley Extension as integral to the success of the newer areas of the business as well as an engine for leadership development within the company.

Dean Lapiner reported that the Southern Branch of University Extension opened in downtown Los Angeles eighty years ago, well before there was a Los Angeles campus in Westwood. From that origin, UCLA Extension has grown with and for Los Angeles and the global communities that are connected to it. Extension’s relationship with the region has been forged in the spirit of constant innovation. From the outset, it has been necessary to determine what kinds of university-level educational services are required by the population and by industry and to find appropriate resources to serve those needs. The innovative content and quality of University Extension programs today reflect rigorous, structured educational responses to the higher-end human resources of the regional knowledge-based economy. Dean Lapiner recalled that in the 1920s Extension had already begun to respond to the needs of the entertainment industry. By the 1950s, Extension offered sequences in film editing and writing for television. It is clear that UCLA Extension leads the world in continuing professional education programs in entertainment studies, the performing and applied arts, and writing. Pioneering curricula in film scoring and post-production for film and television have been joined by pathbreaking instructional design in new media production.

Dean Lapiner then introduced Mr. Foster, who regularly teaches animation through digital image creation for Extension; professionally, he is Senior Vice President for Multimedia at Sony Imageworks. Mr. Foster has been instrumental in helping Extension to develop its curricula in new media and digital image creation.

Mr. Foster explained that over the past several years there has been a revolution in his business through the use of digital technology. Imageworks has added 480 people in that field over the past seven months. He recalled that four years ago he initiated a class at UCLA Extension on 3-D animation and almost immediately began to recruit talent from the class. Extension offers the perfect venue for students with experience in the workplace and good communications skills to make the transition to the entertainment industry. The cooperative program with UCLA Extension has been so successful for Sony Imageworks that, even though it has in-house training for its employees, the number of classes taught has increased to four, encompassing topics such as high-end digital production as well as how to prepare a portfolio.
Regent Soderquist noted that University Extension, which reaches over 400,000 Californians annually, is the University’s original outreach program, and stressed there should continue to be a high level of recognition of what the program brings to the University. President Atkinson observed that Extension has been a focal point of the University in recent years and pointed out that, in seeking support from the voters for a bond issue, the University should remember that Extension alumni form an important source of support.

In response to a question from Regent-designate Miura regarding degree-applicable courses, Dean Lapiner explained that UCLA and Berkeley Extensions are unique in the system in that they both have a history of offering degree-equivalent instruction. Together the two Extensions offer approximately 1,300 courses which transfer directly to UC or to another collegiate institution. Students can use transcripts from these courses when they apply to college. In addition, many courses in the area of professional credit are accepted by graduate schools as being equivalent courses.

Dean Metz continued that courses are determined to be degree-applicable through a process using Continuing Education Specialists, who determine the level of each proposed course. If the course is at the undergraduate level and the specialists want it reviewed for credit, it goes through the regular process used by the campus, which includes review by the academic department concerned and, if approved, being forwarded to the Committee on Courses for approval. The same process is used for the professional credit courses.

Regent Nakashima related that his daughter, who took courses from Extension, had asked him why it is not publicized more. Regent Nakashima also pointed out that the courses offered by Extension are somewhat expensive. Dean Metz explained that the Berkeley Extension catalog is mailed to approximately 350,000 people three times per year. There are advertisements which appear on the radio and BART, because Extension thinks of itself as part of the public service arm of the University. With respect to cost, she pointed out that Extension is totally self-supporting. Given this fact, the average cost of $350 per course is a remarkable accomplishment. No other continuing education organization in the world has accomplished what UC Extension has.

In response to a question from President Atkinson, Dean Metz stated that more than 85 percent of the students who enroll in Extension courses have bachelors’ degrees.

Dean Lapiner commented that while the students who attend courses at Extension are highly educated, UCLA Extension has a strong commitment to outreach and public service engagement. UCLA has been involved in social action projects, and Extension plays a part in the pipeline into higher education.

The meeting adjourned at 3:45 p.m.
Attest:

Secretary