The Digital Library Comes of Age

Historic Photographs Headed for the Internet

by Anne Jackson, Information Technology Publications

When Jervie Henry Eastman was bouncing around the dusty backroads of Northern California taking photographs during the early part of the century, he couldn’t have imagined that his pictures would one day be making technological history at the University of California. But that’s exactly what will happen when UCD’s newly acquired Eastman collection of historic photographs becomes the first of the campus’s extensive museum collections to go on the Internet.

Eastman was a postcard photographer whose territory covered roughly the northeast quadrant of California, along with parts of southern Oregon and the Mendocino coast. His collection of 12,900 original negatives and an as-yet uncounted number of prints includes photographs of American Indians in native dress as well as pictures of the eruption of Mount Lassen, the building of Shasta Dam, area logging operations, and small towns and scenic landscapes of the entire region. Early images of the UCD campus and the city of Davis are represented, and because Eastman and his partner, Mel Simmons, were amateur pilots, some of the photographs are early aerial shots. Although Eastman and Simmons took most of the photographs themselves, the collection also includes pictures they bought from other Northern California studios.

The collection, which spans the years from about 1900 to 1960, was donated to the Shields Library Special Collections Department last year by Anne Fisher of Susanville, who bought Eastman’s postcard business after he died and Simmons retired.

“IT’s a unique body of work photographically,” says Special Collections Head John Skantiland; “partly because there was an ethic among postcard photographers of the time of not intruding on other’s territory, but...” Continued on Page 7

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E-mail

Stories Welcome

Does it make you want to scream when a e-mail message arrives with nothing in the subject line? Send your e-mail pet peeves and horror stories to ljpub@ucdavis.edu. We’ll include them in our soon-to-be-published Guide to E-mail Etiquette.

Political

MSOs Form

Marilyn Kays of Environmental Studies and Pomology and Judy Martin of Plant Pathology and Nematology are forming an ACCESS 2.0 Users’ Group. The group will explore ways in which databases can be used to streamline administrative functions. The group will meet from 9—10 a.m. on the third Tuesday of each month.

Contact Marilyn Kays for more information and the room location at mkays@ucdavis.edu.

Quotables

“We think it would be irresponsible for the administration to ignore the fact that encryption could be used for criminal activities as well as legitimate business purposes.”

Mike Nelson
White House Technology Advisor

“I don’t like to see criminals use this technology. If I had invented an automobile and was told that criminals used it to rob banks, I would feel bad, too.”

Phil Zimmermann
Programmer and creator of Pretty Good Privacy (PGP) encryption software

I.T. and SD&PS Launch Brown Bag Series

To keep the campus abreast of trends in information technology, the Division of Information Technology and Staff Development and Professional Services are cosponsoring a series of brown bag presentations this month. The brown bag presentations are part of the Information Technology Outreach Program and will continue in the 1995-96 academic year. All members of the campus community are welcome to attend the presentations, which are scheduled from noon to 1 p.m. Dates, topics, and locations are as follows:

- Wednesday, May 17: Network 21 Status Update, Silo Cabernet Room, Carole Barone, Associate Vice Chancellor for Information Technology, will provide a project status report and answer your questions.
- Wednesday, May 24: Computing Support: Where Is It When You Need It? MU East Conference Room. Information Technology’s Joan Gargano, Zack O’Donnell, and Tim Leelahan will describe distributed computing on campus, tell how it applies to your work at the university, and how computing support is accomplished in a distributed environment.
- Wednesday, May 31: Hardware/Software Recommendations, Silo Cabernet Room. Joan Gargano, director of IT’s Distributed Computing Analysis and Support (DCAS) will provide tips that will help you plan your computing purchases.

The Brown Bag series is just one of many forums Information Technology and Staff Development are using to keep the campus up to date on new developments in information technologies. To suggest topics, send e-mail to nharrington@ucdavis.edu or call 752-5946.

For further information on events sponsored by Information Technology and other groups interested in promoting the use of information technology, please see the I.T. Calendar on Page 8.

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Catherine Curran, Information Technology Publications

In the near future, when a geology student goes to the Art Library looking for pictures of volcanoes, Bonnie Holt won’t have to paw through hundreds of slides and prints.

Instead, she will go to the computer and do a “volcano search.” In a matter of seconds, several examples of artwork with volcanoes will be displayed on the screen.

Over the past two years, Bonnie Holt has been working to create a pilot database from the Art Department Slides Library. She has teamed with Information Technology to put the Art Library’s collection of slides and mounted reproductions on computer. Using QBC software from IBM and an XTerminal... Continued on Page 7

Editor’s Note: The University of California library system is putting on an ever-increasing number of published materials at your fingertips through online databases. Many of the databases that can be accessed through the UC library system are described on Page 6.
Enigma Logic Password Information

To improve password security when accessing the Barone Student Information System, the Enigma Logic Password Security System is being implemented. Information is being sent to departments that have accounts on Banner but have not already made the transition to Enigma Logic. The mailed information will include the types of tokens available and the procedures for obtaining them. The information will be mailed through June 1995.

Enigma Logic mailing includes information to help departments choose the token type that is right for their environment. Also included will be a list of existing accounts eligible for hard token.

Implementation Underway for Campus Outreach Program

"This is the most important thing happening in Information Technology right now," is how Associate Vice Chancellor for Information Technology, Carole Barone, sums up the implementation of the Information Technology Outreach Program (ITOP). In 1994 Carole Barone appointed a task force to design an outreach program that would help the campus adjust to rapid changes in information technologies. The ITOP task force examined how changes in information technologies are impacting the way business is conducted throughout the university, and presented a report based on those findings to associate vice chancellor Barone in January of this year.

Information Technology is now implementing recommendations made in the ITOP report. Chairing the implementation effort is Paul King, Assistant Director of I.T.'s Information Resources group. As implementation coordinator, King is overseeing the work of the ITOP Oversight Committee and four subcommittees: Communication and Outreach, Recommended Solutions, Technology Literacy, and Technology Support. All committees have campus representatives from outside the Division of Information Technology.

The campus is already beginning to see work of the ITOP implementation group. A Hardware Solutions document offering tips on how to configure office computing systems was published in April. This month, Information Technology in conjunction with Staff Development & Professional Services, will launch a series of lunchtime presentations (See story on Page 1).

Implementation of a departmental Technology Support Program is underway, and selected departments will begin participating in the program in June. For further information about the ITOP program, contact Paul King at 752-0342 or send e-mail to pmking@ucdavis.edu.

Designing Sites for the Internet

No one would accuse Ken Weiss of shying away from the big stuff. As a programmer/analyst with I.T.'s Distributed Computing Analysis and Support team, his job is to facilitate the use of computing network tools on campus and thereby help expand access to electronic information resources and services.

Along with Steve Faith, also of DCAS, he maintains UCD's World Wide Web server, the UC Davis Home Page, and the DCAS Home Page. He is also the UC Project Manager for the Whois+ tested project, which will expand the online white pages Whois directory protocol to the entire UC system-and perhaps ultimately to the whole world through the Internet (See article, Page 4). In addition, he is the project leader for a joint I.T./Library endeavor to develop distributed multimedia databases on campus.

Weiss is also working to help instructors use information technology in teaching, particularly through high-speed data networks. So far he has helped develop applications in political science, environmental studies, entomology, religious studies, computer science and English. At the same time, he is working with IBM on a multimedia indexing project that makes it possible to search a collection of images in a database according to color, shape, pattern, texture and other visual attributes. And he coordinates I.T. activities aimed at implementing digital libraries and at developing distributed multimedia databases on campus.

Does he enjoy the challenge? "That's why I show up for work every day," he says.

Service Award

Kerie Holck, Acting Assistant Director of Repro Graphics at UCD has been awarded the Customer Service Excellence Award from the Society for Service Professionals in Printing, a national industry information and support organization. Holck was one of only five printing professionals in the country to win the award.

Each award winner was nominated by letters from a peer, a supervisor, and a customer. Holck has been with Repro Graphics for 15 years and oversees purchase, billing, customer service, and design.

Site License Coordinator

Effective May 15, Dan Todd will assume the eagerly awaited new position of campus Site License Coordinator. Todd is currently working in the I.T.-CAP as a computer consultant. More information on the role of the Site License Coordinator will be published in the future.
Holistic Computing
Individual Attitude Plays Big Role in Your Overall Computing Health
by Anne Jackson, Information Technology Publications

If your work causes you physical pain or leaves you wiped out by the end of the day, a few simple adjustments in your workstation or work habits may be all that’s needed to solve the problem. But don’t neglect the bigger picture, or you may not get much further.

What you eat, whether you get enough exercise, whether you smoke, all contribute to how your body handles work and to how you feel by five o’clock.

That’s the message from Janet Ford of Environmental Health and Safety who loves to advise UCD departments and individual employees on how to avoid the aches and pains and fatigue that result from not observing sound ergonomic principles.

Ford gives presentations on how to adjust computer workstations.

For those of you who work at computers, Ford offers one piece of comforting news—that the dreaded carpel tunnel syndrome so often suspected as the culprit for pain in computer-related jobs actually turns up infrequently and is most often linked to other risk factors: women are much more prone to carpel tunnel syndrome than men, for example, with hormones, thyroid problems, smoking, and genetics all playing a role.

Usually pain in the hand and wrist that develops after prolonged work at the computer results from simple tendonitis, says Ford. Tendonitis, meaning simply an inflamed tendon, is caused by activities that strain the tendon beyond capacity, such as strong exertion, unnatural positioning, or repetitive movement. A tendon works like a bike cable, moving back and forth inside a sheath, says Ford, who is a Physical Therapist and who also holds a Master’s degree in Biomechanics.

“If a small injury develops and you ignore it, the inflammation can spread along the length of the sheath. The lesion is, back off the activity and get treatment right away, not two months later. Your body can handle most of these injuries if you address the problem early,” says Ford.

“The bottom line is, it’s not just how you sit at your computer, it’s your whole attitude toward health and well being that’s going to make or break the situation.”

For departments wanting to know how to set up or adjust workstations ergonomically, or for individuals having problems, Ford will come out and give a 45-minute presentation or offer specific problem-solving advice.

Many simple adjustments can make a big difference. A few years ago several of the employees of one campus department began complaining of aches and fatigue soon after receiving new computer furniture. They called Ford, who came out and discovered that the furniture company had installed all of the furniture at the same height.

These days a big problem among campus computer users is mice—that is, increased use of the mouse as more and more people switch over to Microsoft Windows. The difficulty is that existing workstations often have no room to accommodate a mouse next to the keyboard where the user would be, so workers end up improving a spot far farther away. That’s bad for two reasons, says Ford.

“If you have to reach for the mouse, that can cause you to manipulate the mouse from the wrist main instead from distributing the movement over the whole arm, and reaching out causes ‘shoulder to round forward, leading to soreness and fatigue of the arm and shoulder.’

All of that can be solved by just moving the mouse to a new location,” says Ford.

And scoot in close to the keyboard—50 percent of people reach out too far, says Ford. “Figure out why you want to sit so far back. Maybe the monitor is too close. Try moving the monitor back, but sit closer to the keyboard. Your elbows should be at your side, along your seamine.”

As Ford points out, it is the university’s responsibility is to provide proper equipment and a proper work environment and training. “It’s the responsibility of the person to keep themselves healthy, to utilize equipment properly, and to take breaks. People forget about that part,” Ford says.

15 Ways to Practice Safe Computing
Observing ergonomic principles and following good work habits will help prevent aches and fatigue and boost productivity. The reason is that poor postures force the body to expend more muscle energy. Janet Ford of Environmental Health and Safety offers the following checklist to help computer users adjust workstations and improve work habits.

For more advice, or for help with specific problems, call Ford at 734-5252.

1. Make sure your chair height allows you to sit with your feet flat on the floor (or on a footrest) with your thighs parallel to the seat and knees bent at about a 90-degree angle. (You don’t have to sit that way all day—in fact, it’s good to wiggle and stretch—but you should be able to achieve this L-shaped position.) Remove any boxes or other items from under your desk so that you can stretch your legs.

2. Raise or lower the chair back if necessary so that the chair supports your lower back.

3. Make sure your keyboard is at elbow level, that your elbows are bent at 90 degrees, and that your arms are at your sides as you work, not stretched out in front of you. If you find yourself sitting back from the computer because the monitor seems too close, move the monitor back and sit closer to the keyboard. If the work surface isn’t large enough to allow the monitor to be moved back, add a keyboard tray.

4. Keep the mouse next to the keyboard and at the same level.

5. Use your whole arm to move the mouse. Don’t concentrate movement in the wrist and hand. And

hold the mouse loosely, not in a death grip.

6. As you use the keyboard, keep your wrists in line with your forearms—not don’t drop your wrists up or down. Avoid wrist rests, since these tend to keep the wrist stationary while the fingers and hand do all the work.

7. Position the monitor at least 18 inches away and directly in front of you, not off to one side. If necessary, control the lighting in the room to prevent glare on the monitor screen.

8. Make sure the top of the monitor screen is at or just below eye level. If you wear bifocals or trifocals, make sure you’re not tilting your head back to see the monitor.

9. Use a light touch on the keyboard and keep your fingers, forearms, and shoulders relaxed.

10. If you spend a lot of time on the telephone, use a headset rather than cradling the phone between your ear and shoulder.

11. If you must glance frequently at reference materials as you sit at the computer, use a copy holder.

12. Take frequent short breaks throughout the day to relieve fatigue. At least every 45 minutes, benefit your circulation by standing up.

13. Change body positions frequently as you work.

14. Take 30-second vision breaks throughout the day by looking out a window or at a distant object. Focus on the object in front of you, or else forces your eyes to hold an isometric contraction for long periods.

15. Exercise aerobically.

Do You Want to Try Something New?
A joint project of the General Library and the Division of Information Technology, the Center for Advanced Information Technology (CAIT) is located on the first floor of Shields Library. Hours are 9 a.m. – noon and 1-4 p.m., Monday through Friday. CAIT’s Corner is brought to you by the CAIT staff.

New Hardware
We now have an Austin Pentium 90 with 40MB RAM and a 1GB hard drive. It has a PCI bus, 64-bit video card and a built-in 14.4 modem. It is running Windows NT, and will serve FTP and HTTP files. This machine is being used for administrative purposes, but you are welcome to come in and take a look at it.

We also have two new machines on loan from Apple Computer, Inc.—an iMac and a Power Macintosh Workgroup Server 6150. Both machines have the PowerPC 601 microprocessor. The Performa 6115CD has 8MB RAM, 350MB hard drive, a double-speed CD-ROM drive and a Geopol/Teleport 14.4 FX Modem. The Workgroup Server 6150 has 8MB RAM and a 500MB hard drive.

New Software
The software listed here is new in the CAIT this Spring. To evaluate any of these titles, please give us a call and schedule an appointment.

- Freehand 5.0 for the Mac by Macromedia
- Perfect Office for Win by Novell
- Delphi for Win by Borland
- State 4.0 for Win by State Corp.
- Insignia Solutions Soft. Library for Mac and PC by Insignia
- 5 Random
- Superbase ‘95 for Win by Superbase Inc.
- FloodPaint for Mac by SuperMAC
- Peachtree Accounting 2.0 for Win by Peachtree FileGuard for Mac by Highwire
- Poor Typistry 2.1 for Mac by Pizar

Tech Talk
Macintosh clones. Yes, it is true. The Macintosh architecture is going to be built into computers produced by manufacturers other than Apple. As many as 50 vendors will be competing for different markets in the once-strictly Apple arena.

CAIT Projects
To support the burgeoning campus interest in establishing sites on the World Wide Web (WWW), the CAIT office has purchased a Web server available to departments, faculty, and ASUCD recognized clubs or organizations. This service is designed for those who do not have network connections, or who do not have the hardware for a proper WWW server. The information that is put on PubWeb can be stored there for a one-year period (negotiable). PubWeb uses a Macintosh WGS 95 running system 7.1.

Groups that would like some coaching on how to write a home page, can request a short lesson in HTML basics. Information can be transferred to PubWeb from Unix, Mac, and PC systems using either foppies or FTP. If you are interested in establishing a home page on PubWeb, call 752-6387 to schedule an appointment.
Changes Implemented to Keep Pace with Computing Needs
by Dana Drennan, Information Resources

To keep pace with the growing demand for both local and global information resources, Information Technology is constantly looking at ways to better manage central computing systems, while maintaining system security and accessibility.

To achieve these goals and satisfy the diverse needs of the campus community, Information Technology will be implementing several changes in computing services over the next few months. Changes include the following:

- **E-mail Storage:** Information Technology is now enforcing quotas on the amount of e-mail you can store on your campus electronic mail systems. If your electronic mail file on the central campus computer system (e.g., Rocky, Bullwinkle) reaches 2 MB, you will be able to compose mail, but messages sent to you will be returned to the sender with a note explaining that the senders mail file has exceeded its quota.

The quotas will be enforced automatically by the operating system. The policy directly affects those who use Pine and other e-mail programs that run on central computing systems. It also will affect Eudora users who have the program configured to store messages on a campus central server.

Information Technology encourages those interested in archiving large volumes of electronic mail to use Eudora or another e-mail program that allows you to store electronic mail on your personal computer. Programs like Eudora (available free of charge to campus users) allow you to store electronic mail on your hard disk.

Information Technology recognizes that there are special circumstances that would require you to use additional
disk space on the central system. To apply for an additional allocation of disk space, you can retrieve the "Application for Additional Diskspace" from the Campuswide Information System. Using graphic, follow these paths: The Campus Computing Systems, Computing Policies.

Send the completed application to systems@it:

- **VMS System Upgrade:** To accommodate the need to run new software used for scientific and statistical analysis, the Open VMS operating system will be upgraded to 6.1 this summer. There will be minor changes in some DCL commands (e.g. the /PAGE qualifier), but do not expect a lot of obvious changes. Any modifications made as a result of the upgrade will be posted to the online help and to the CWS.

- **Restriction of "root Files:"** To protect the security of campus computing systems, Information Technology will enforce its policy restricting the use of "root" files. Instead they allow users to connect to certain hosts without a password, "root" files can pose a threat to system security. Currently the only allowed "root" files are those needed for specific applications to run, in which case they are allowed to remain on the system only while the application is running.

Beginning June 19, 1995, all "root" files will be automatically removed from central campus computing servers. In fall 1995, Information Technology will implement a root registration program for those users with a demonstrated need to use "root" files. We will not allow root files solely for the convenience of logging into the Information Technology servers without having to provide a login-ID and password.

Beginning Fall Quarter 1995 users caught violating the "root" policy will have their accounts suspended without warning.

- **Password Improvements:** The use of the proactive password checker, passwd+, written by Computing Science Professor Matt Bishop has enabled the system to issue warnings that extend password lifetime to one year. The system will inform you when your password needs to be changed.

**New Login Name for Accessing Central Servers:** You no longer have to pick a server (e.g. Chip, Dale, Rocky & Bullwinkle) when logging into the campus computing system. You can now login by typing the node name ISN at the Request prompt. ISN will connect you to the server with the least amount of traffic at the time. For more efficient access and better performance, we urge you to login with the ISN name.

For further information contact Dana Drennan at 753-0335 or ddrennan@ucdavis.edu.

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**Project Is Tested for Global White Pages**

Today the campus, tomorrow, the world. That’s the outlook for the Whois++ project underway at UC under the direction of IT’s Ken Weiss. Whois, of course, is the online white pages directory that allows us to find the e-mail address of any UC Davis account holder through a system of keyword search. The Whois++ project expands the Whois search capability to the entire University of California system, enabling a user to track down an e-mail address of an individual on any of the university campuses simply by typing in Whois++ and a last name. In other words, when Whois++ is in place in six months, it will no longer be necessary to know the name of the campus in order to locate e-mail account holders anywhere in the UC system.

But that’s only the beginning. If the project is successful and satisfies Internet "rough consensus" standards of efficacy, the protocol is likely to be ballooned to global scale — making it possible to find e-mail account holders anywhere in the world without the need for knowing the name of the appropriate server. Instead, Whois++ will go to what Weiss calls "a world control" to locate e-mail addresses.

Weiss, who is the UC Project Manager for the National Science Foundation-funded Whois++ tested project, believes the prospects for global application are good.

"I think it will work," he says, "and in the electronic world, rough consensus can happen fairly rapidly, like (it did) with the World Wide Web — in just a few months. The white pages directories are chosen for funding, says Weiss, "because it’s a small enough data problem that you don’t have to argue about what to include or not include, but it’s also applicable to other kinds of information."

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Continued on Page 5
Workshop Introduces TAs to a Variety of Networking Tools

"Using Electronic Communication in Undergraduate Courses" was the theme of an all-day workshop for Teaching Assistants (TAs) held on Friday, March 31.

Sponsored by the Teaching Resources Center, the workshop introduced participants to e-mail, newsgroups, gopher, the Internet Relay Channel, and the World Wide Web. The workshop accommodated 40 TAs, who were nominated for participation by department chairs.

The all-day workshop was taught by a team of faculty members and TAs: Kevin Roddy, Medieval Studies/LT; Geoffrey Wandersfoort-Smith, Political Science; Dean Messer, Environmental Studies; and Mitchell Watnik, Statistics. Additional staff included: Joe Aime, English; Brian Hill, Information Technology; Scott Sherman, Environmental Horticulture; and Harry Spangler, Environmental Studies. The workshop was hosted by Frank Samaniego and Winifred Anderson of the Teaching Resources Center.

Summer Institute Scheduled. The second annual Summer Institute on Applications of Technology in Teaching is scheduled for the week of July 10-14, 1995. The institute is sponsored by the Teaching Resources Center in collaboration with the Office of the Provost and the Division of Information Technology. Applications are due Monday, May 15. Call Winifred Anderson at 752-6050.

Campus Examines Modem Use Policies
by Kevin Kawaguchi, Communications Resources

Because the number of people gaining network access via the campus modem pool continues to increase, you will soon be asked for a valid I.T. username/password before you see the request prompt. This new password feature will ensure that the campus modem pool is used only for university-related business. The new login process is similar to that used by those who use SLIP and PPP services.

Accommodating the growing demand for modem services is an ongoing challenge, and the Division of Information Technology and the Information Technology Administrative Advisory Committee (ITAA) will examine the implementation of several new "modem policies" in the months to come.

Information Technology will make every effort to relay necessary information to the campus community. Please look for announcements on the Campuswide Information System and in the I.T. Times. If you have comments or suggestions on ways to facilitate access to the campus modem pool (e.g., sessions length, automatic timeouts, and express modem services), please send e-mail to kitkawaguchi@ucdavis.edu.

Making Room for More Addresses

Due to shortages in IP address space on the Internet and to make address space for Network 2.1, a new routing protocol will be implemented on campus. The OSPF (Open Shortest Path First) routing protocol will be activated, allowing for the configuration of smaller sized subnets. Currently most subnets can have about 250 hosts, which is more than an average department needs. Departmental hosts are not required to speak OSPF since we will continue to transmit RIP updates on departmental interfaces.

Implementation of the new routing protocol will require the following changes to departmental LANs:

- Changing IP addresses to use contiguous ranges.
- Changing subnet masks.
- Changing the default router address.

Information Technology will maintain close contacts with departmental Network Administrators throughout the process to minimize any confusion. For general questions or comments about these changes, please send e-mail to kitkawaguchi@ucdavis.edu.

In the past year, utilization of the campus Modem Pool has more than doubled. In March 1995, the Modem Pool logged more than 120,000 hours of active service.

Network News

Continued from Page 4
the March issue of the "13 Report." In contrast, the portion of PC-equipped households where the mother has just a high school degree is 33%. (S.F. Times, April 23, 1995)

- Prospector's Guide to the Internet: Harvest, an indexing and retrieval system for Web and other Internet-based information, is available free from the University of Colorado: http://harvest.cs.colorado.edu/Data

- High-Tech Physics Studio: Renowned Polytechnic Institute is saving money and increasing student-professor contact through a "studio" approach to its introductory physics course. Students use computers to work out the answers to their problems, with an instructor roam- ing the room and providing individual help as needed. The approach has enabled class sizes to be cut from 345 to about 90, and students using the studio approach need only four hours a week to learn the information imparted in the five-and-a-half-hour traditional format. "It's both high-tech and high-touch," says a professor of education at the University of California at Berkeley. (Chronicle of Higher Education 3/13/95 A19)

- Libraries House Computers: A new survey by the American Libraries Association's National Information Infrastructure Task Force reports that tomorrow's college students likely will not have had much experience with computer technology when they show up on campus, unless they've spent a lot of time hanging out with the school librarian. Only 59% of teachers surveyed reported access to multimedia computers, and only 26% had an Internet connection. However, half of the school librarians surveyed had Internet accounts and 85% had multimedia computers. (Chronicle of Higher Education 3/13/95 A19)

- Seeing-Eye Technology for the Net: A scanning laser ophthalmoscope, or SLO, can be used by the visually-impaired to read words on a computer screen. The SLO is essentially a $100,000 miniature projection-TV system that is used as a research tool for probing inside the eye. But people with very poor eyesight may one day be able to use goggle-sized SLOs with lenses made from semiconductor lasers to access the words and images on their computers. The scientist at Schepens Eye Research Institute in Boston who invented the SLO notes that commercial production is not yet viable: "If the video-game people would just grab this, it would take off like a rocket." (Business Week 3/27/95 p.12a)

- Peterson's on the Net: Peterson's — a provider of information on colleges, and other schools — has now staked its claim on the Net. The Peterson's Education Center provides access to public and private colleges and universities, as well as summer programs for students and college application forms. http://www.petersons.com (Tampa Tribune 3/13/95 B6:G3)

Items appearing in this column were gleaned from Lifeway, a summary of news provided by EDUCOMM — a consortium of leading colleges and universities seeking to transform education through the use of information technology.
Online Databases Grow in Size and Subject

by Anne Jackson, Information Technology Publications

How many remember only fourteen years ago when nearly all newspapers and nearly all libraries were delivered to the public by mail? How many remember the cost of the telephone bill? How many remember a time when it was not possible to reach one's friends or relatives from coast to coast in minutes? How many remember a time when the world was a place of facts, not information? How many remember a time when the world was a place of knowledge, not information? How many remember a time when the world was a place of information, not knowledge?

The world of information has changed dramatically in recent years. The advent of the personal computer, the Internet, and the World Wide Web has revolutionized the way we access and use information. This has led to the growth of online databases, which now offer a wealth of information to researchers, students, and professionals.

The databases that are available include a wide range of subjects, from basic science and technology to literature and the arts. Some databases are specific to a particular field, while others cover a broader range of topics. Many of these databases are accessible through the Internet, making them available to anyone with an Internet connection.

There are several types of online databases, including subject-specific databases, general interest databases, and specialized databases. Subject-specific databases are designed to provide information on a specific topic, such as medicine, law, or finance. General interest databases provide information on a wide range of topics, while specialized databases are designed to provide information on a specific type of document, such as government publications or historical documents.

The growth of online databases has been driven by the need for more efficient and effective ways to access information. With the increasing amount of information available, it is becoming increasingly difficult to find what you need when you need it. Online databases provide a solution to this problem by allowing users to quickly and easily access the information they need.

In conclusion, the growth of online databases has been a significant development in the world of information. These databases provide a wealth of information to researchers, students, and professionals, and have revolutionized the way we access and use information.

Task Force Envisions the Future of Library Services

Digital Library Research and Development was the topic of discussion when librarians, information technologists, researchers and college administrators gathered in Washington D.C., April 10-11. The occasion was the Spring 1995 meeting of the Coalition for Network Information, a consortium of ARL, CAUSE, and EDUCOM.

With presentations exploring what's practical, possible, and possible, participants gleaned together visions of the future of the library. Discussed in a session that allowed for questions and answers with the panelists were: what libraries can do to use the power of the Internet to viewing educational services and entertainment videos offered snapshots of an online, interactive library.

Addressing the challenges surrounding the discovery and retrieval of information was A. Lynch, Director, Library Automation, University of California Office of the President. Lynch noted that current expectations often exceed capabilities as he discussed the nuts and bolts of information retrieval addressing everything from infrastructure, to system architecture, to resource identification.

international law, comparative law, and municipal law of countries other than the United States.

Index to Hispanic Legislation (WLB). Index to laws, regulations, and decrees of 29 Spanish-speaking countries and former Portuguese colonizations in Africa from 1976-present. Includes regional and national abstracts. Inside Information (BIN). Index to articles in 10,000 journals and magazines from the British Library Board's Supply Center from October 1992-present. Covers all topics.

FirstSearch is a second group of databases available to UC affiliates through a special licensing agreement. FirstSearch can be searched with a single search interface. FirstSearch uses the same search interface and database as the FirstSearch from the U.S. Department of Education's Office of Educational Technology. FirstSearch is available to UC users only since January 1995, this database provides access to over 200,000 titles of English-language books, newspapers, periodicals, yearbooks, museum bulletins, competitions and award notices, exhibition listings, interviews, and film reviews. Covers September 1984 to present.

Networked CD-ROM Databases

The following CD-ROM databases can be reached through networked connections from home computers or from designated terminals in library reference departments. Remote access to these databases requires a separate password, available only from any UC reference librarian. To access the CD-ROM network from an off-campus computer, type library-center at the request prompt. From a campus computer, type telnet library-center at the request prompt (e.g., g.*, h.*, or j*) and follow the library path. This database is available to UC campuses and some select college libraries.

Aquatic Sciences and Fisheries Abstracts: Chico Database

Food Science: Complete Database in Aquatic Science, Fishery Science, Aquatic Biology. M*, National Technical Information Service Water Resources Abstracts. M*
Historic Photographs Headed for the Internet

Continued from Page 1

also because Eastman was a professional photographer, so the images have a uniformity of tone, size, and format."

Much of the value of the collection, says Skarsstad, will be to historians, biologists, lawyers, to those preparing environmental impact reports, and to others interested in documenting, for example, the appearance of a particular forest before clear-cutting took place or before Oreoville Dam was built.

The Special Collections staff will soon begin the work of scanning and cataloging the images, and when the project is finished, computer users anywhere in the world will be able to get on the World Wide Web, select "Eastman Original Collection" from the UC Davis Shields Library Home Page, and search the collection by asking to see photos of, for instance, downtown Chico in 1925. The search will bring up a low-resolution thumbnail image along with a text description of each photograph. A high resolution copy of any particular photograph can then be downloaded to the computer screen.

Having a copy of the photograph appear on the computer screen will enable the user to sharpen the image using software such as Adobe Photoshop and to magnify particular areas to reveal details not readily seen in a handheld print. Users will also have the option of ordering a photographic image printed from the original negative and sent through the mail.

The project will be a boon to researchers. Before this, anyone looking for old photographs has had to come in person to the library to sit manually through the collection and to rely upon the memory and expertise of the Special Collections staff for guidance to particular subject matter. Now, thanks to rapidly developing computer imaging technology, anyone will be able to browse the collection by computer for free. The result, says Skarsstad "will be to put good quality images in people's hands without the library having to deal with potential damage from over-handling."

But the main significance of the project, says Skarsstad, "is not preservation, but access. We're really talking about access to nonprint material that you would otherwise have to come here to see. We're expanding access to whatever you are with your computer."

And the Eastman collection is only the first. Waiting in the wings are some 200 other, often much larger, campus museum collections—including the Bohart Museum of Entomology, an Anthropology Department basket collection, a nematode collection, an herbarium collection, and a herbarium collection—from which are also slated to eventually go online.

UC Davis is able to make the Eastman collection available on the Internet because the campus owns the collection outright. Images from some of the other collections, where the university in some cases owns only the rights for viewing the material in an academic setting, will be made available for viewing by computer only to the campus community.

Art Library Mounts Collection on Computer

Continued from Page 1

purchased with Instructional Use of Computing Funds, Holt—help of the part-time research assistant—who has watched the library's digital database grow to over 1,000 images.

"IWM was looking for people to test its new QBIC software," says Holt, "Joan Gargano (of J.T.'s Distributed Computing Analysis and Support) asked if we would be interested in participating in the project."

The answer, of course, was yes. And with the help of J.T. programmer/analyst Ken Weise, Holt has added a digital dimension to her role as art librarian by using a scanner and computer to mount portraits, landscapes, sketches, and a variety of other genres on computer.

With the original database still growing, the Art Library's customers are already seeing the potential benefits:

• Freed from having to manually search through slides and prints, library staff will have more time to perform other duties.
• Slides, prints, and other pieces will be spared wear and tear.
• Viewers will be treated to fresh perspectives since the software's searching capabilities allow them to instantly compare works in a variety of ways (e.g. by artist, period, and subject.)
• Short for Query by Image Content, QBIC indexes artwork by text, shape, texture, color, and object. Textual information is being added to the database, and eventually each image will be labeled with the artist's name, date, medium, and dimensions.

"I think what's really interesting about having the images on computer is the surprise element," says Stacey Vetter, a graduate student who is assisting with the project. "You can do a search by shape and find a whole set of paintings you didn't think fit into the category.

UC Davis Selected as Site for New Media Center

Efforts to bring multimedia capabilities into the classroom got an enormous boost this spring when UC Davis was selected to participate in the national New Media Centers program. The New Media Center will provide a focal point for developing, producing, and distributing multimedia instructional materials.

To be housed in three locations on campus and staffed by artists, photographers, audiovisual technicians, an animator, and technical professionals, the program will deliver multimedia materials and tools to faculty throughout the campus network.

UC Davis was one of 30 institutions across the country chosen for the program this year out of some 100 applicants. Associate Vice Chancellor for Information Technology, Carole Barone, was recently named to the eleven-member New Media Center Board, which consists of corporate and academic representatives. Watch for more details about the New Media Center in future issues of the I.T. Times.

Fort Rock, Oregon in October 1947 with an automobile probably belonging to the photographer, Jervie Henry Eastman.

The Art Library's image database allows you to search by shape, texture, and color. Searching by an oval shape uncovers a variety of portraits.

For instance, rape is a recurring theme in art, even though paintings are rarely labeled as such. With the digital database, someone researching the topic could use a refining figure to search by image and identify paintings that may fall into the category," says Vetter.

Searches can be specific or general. You can ask the computer to display images with a red ball in the top right hand corner. Or, you can be more general, and draw an oval shape in hopes of finding a wide variety of portraits.

Because of its ability to categorize artwork in a variety of ways, the database will be useful to faculty who teach technique as well as to art historians who will be able to use the data to show how different images are depicted through time.

Judging from previous requests, the Art Department thinks its digital library will be useful to people in other disciplines as well. For example:

• The Physical Education department has requested images of women for dance instruction.
• Faculty in the School of Veterinary Medicine have requested images of animals to illustrate lectures.
• Sociologists have requested portraits to show how people of race and gender have been depicted in different eras.
• Geology students have requested images of volcanoes.

These are the kinds of requests that inspired the librarian to pursue the image database project.

Located on the second floor of the Art Building, the Art Library is open Monday - Thursday from 9 a.m. - 4 p.m., and Friday from 9 - 11:30 a.m. For more information on the image database, call 752-6152.

Fort Holt, Oregon

Eastman Originals Collection, Department of Special Collections, University of California Library, Davis, California

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I.T. Calendar
May 1995

SUN MON TUES WED THU FRI SAT
1 2 3 4 5 6
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21 22 23 24 25 26 27
28 29 30 31

Program Adds New Dimension to GIS
by Bonnie Johnston, Information Technology Publications

Since ECD established a beginning Geographic Information Systems class in the spring of 1994, students have been applying the ARC/INFO software to a wide range of disciplines.

Student projects have included a study of chertan migration in Africa, flood plain analysis of Sacramento county, and an examination of the influence of topography on me biting distribution in Los Angeles county. What do these projects have in common? They all depend on data that can be expressed spatially, producing an image that can then be manipulated and analyzed — using software like ARC/INFO.

Significantly reduces the amount of time that researchers have to spend "messing" with their data, leaving them to spend more time analyzing their results.

This quarter, UCD has introduced an advanced GIS class — Applied Biological Systems Technology class. It is team taught in the Visualization Laboratory by Wes Wallender of Hydrologic Science and Paul Grant of Information Technology, with assistance from Glenn Fitzgerald, a graduate student in Agronomy and Range Science. Where the beginning class focuses on the analysis of data stored and displayed using vector graphics, this new class takes advantage of ARC/INFO's grid module, which allows students to create and analyze raster datasets as well.

Vector graphics, which are composed of arcs, lines, and irregularly shaped polygons, take up less file space than raster graphics, but creating graphical overlays with vector images can be a lengthy process, requiring complicated algorithms. Raster graphics, on the other hand, tend to require more storage space, but because their concept is laid out on a grid, calculations based on data expressed in raster form are much quicker.

"Neither is necessarily better or more accurate," says Grant. "There are certain tasks which are easier to perform using rasters, and there are situations where each type of image has its advantages. For example, raster-based GIS would be used when representing a continuous variable, such as elevation, slope or aspect."

Students in the advanced GIS class not only learn more advanced analysis techniques using ARC/INFO, they are also taught to use Data Explorer, a scientific visualization software package from BMI that allows students to take the same data that they would analyze in ARC/INFO and express it in three or four dimensions.

Data Explorer expresses data in three dimensions by plotting data to create three-dimensional shapes; the program expresses data in four dimensions in two ways: either by either plotting three of the data sets as a three-dimensional surface and then mapping the fourth data set onto that surface, or by plotting three data sets as a three-dimensional shape and then showing their progression through time via animation. In order to run Data Explorer, I.T. has expanded the Visualization Lab to include five Silicon Graphics Indy workstations, which contain hardware for quick processing and manipulation of graphics.

For more information about GIS, you can contact Paul Grant at 725-8246 or via e-mail at program@ucdavis.edu.