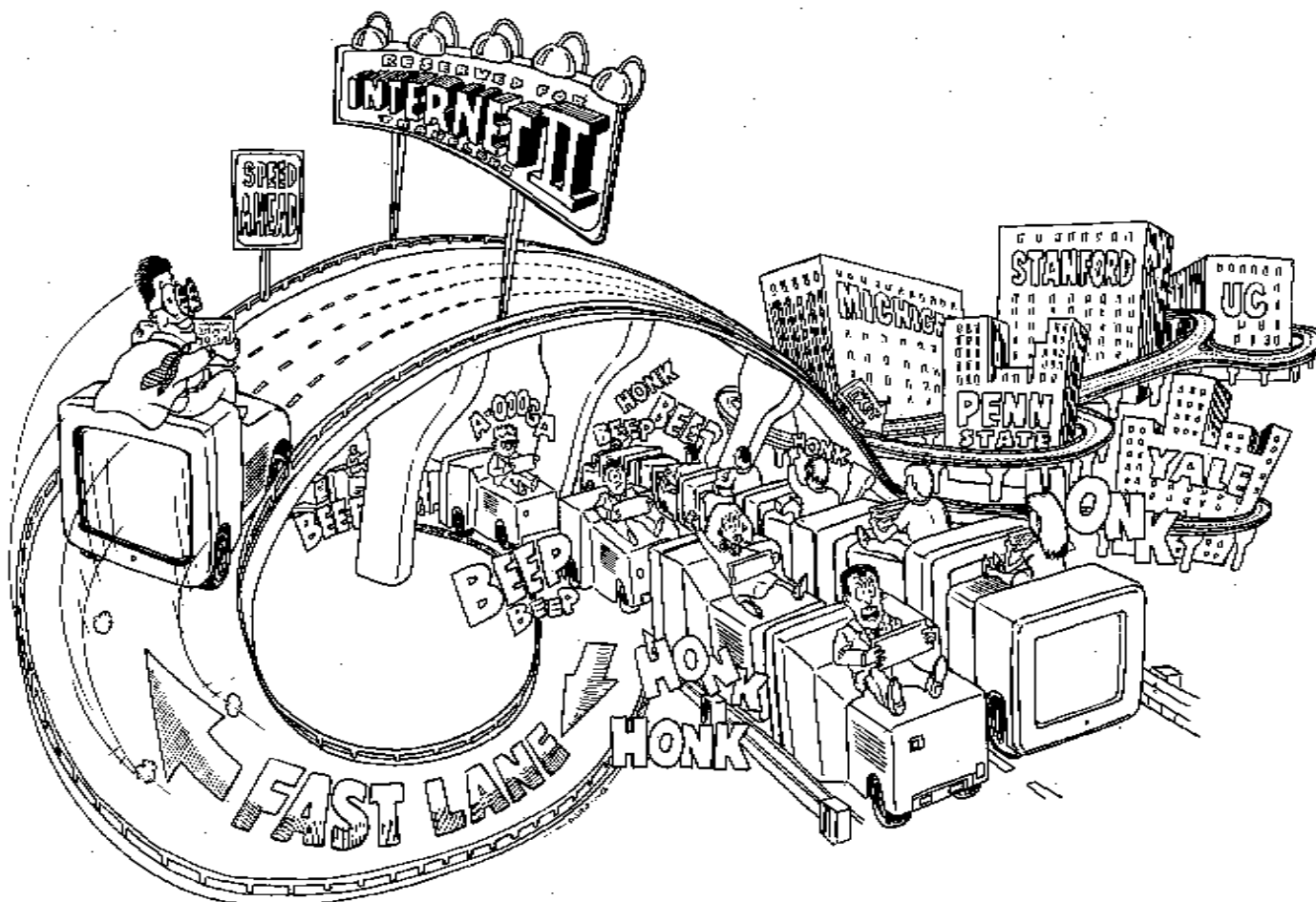




I.T. TIMES

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Internet II

Universities Build New Roadway for Researchers

by Catherine Curran, *Information Technology*

Anyone whose network connection has collapsed while surfing the Web knows that potholes aren't confined to pavement.

With everyone from online soothsayers to scientific researchers competing for space on the high-tech highway, the Internet has become a victim of its own success. Originally designed by scientists to be used for collaborative research projects, the Internet is weighted down by heavy traffic and can no

longer support the people it was intended to serve.

Determined to find a way around information gridlock, UC Davis has joined 33 other research universities in building the next generation of Internet — Internet II.

"There are new applications in line, but people aren't willing to use them because the current Internet infrastructure will not support them," says Russ Hobby, who has been writing Internet protocols since 1986 and is one of the five original Internet II architects.

"How often would you use your telephone if you thought the connection would break down in the middle of the conversation?" asks Hobby, emphasizing that the development of new networked applications depends on reliable infrastructure.

Hobby, director of Information Technology's Advanced Networked and Scientific Applications, is working with representatives from other universities to design a network thoroughfare that will support the following:

- **Distance Learning:** With an emphasis on lifelong learning, educators are looking for new ways to reach students of all ages. Distance learning technology, which allows an instructor to interact with students in remote classrooms, depends on reliable, real-time communication. Internet II will enable instructors to reserve network bandwidth in advance for distance learning programs. The network's higher transmission speeds will support traffic generated by video conferencing and other multimedia applications.

- **Desktop Collaboration:** From their desktops, faculty may engage in face-to-face discussions with colleagues at other universities. They will be able to share data, graphics, and reports and discuss the information while viewing it simultaneously.

See *Internet II* on Page 2

Archive Class Lists on the Web

Instructors who use automated class lists may archive all mail sent to the list in indexed html pages.

To exercise the option, send e-mail to postmaster@ucdavis.edu and request that the class list be archived to the Web site. Be sure to include the name of the list. For information on automated class lists, go to <http://sysweb.ucdavis.edu/faqs/classlist.html>

Service Guide Published

Everything from how to establish a class list to how to reserve a mediated classroom is included in the recently published Information Technology Faculty Services Guide. To request a copy, send e-mail to itpubs@ucdavis.edu.

Recommended Solutions Updated

Two Recommended Solutions — Hardware Solutions and Purchasing a Modem — have been updated. Copies are available at I.T. Express in Shields Library or by sending e-mail to itpubs@ucdavis.edu. Solutions are on the Web at <http://www.ucdavis.edu/IT/Solutions/>

Looking for a Lab?

Campus computer labs are open for student use when not being used for classroom instruction. Now, students can determine which computer labs are available for drop-in use by looking on the Web at <http://lm.ucdavis.edu/calendars/open/>

Information Technology encourages instructors to share this Web address with students. Lab personnel also have been instructed to share this information. Send e-mail to lab-reserve@ucdavis.edu.

Learn at Your Own Pace

Video-based tutorials on a number of computing applications are available for check out in the Self-Paced Learning Lab, located in 1101 Hart Hall. Topics range from operating system administration to creating PowerPoint presentations. Faculty and staff may check the videos out overnight. For more information call 754-8091 or sent e-mail to learnit@ucdavis.edu.

Internet II Fact Sheet

Who's Building It?

Internet II is being built through a partnership between universities, government, and private industry.

The Architects: The individuals listed below worked together, and solicited input from many others including Professor Larry Landweber of the University of Wisconsin, to develop the initial Internet II design:

- Russ Hobby, Director of Advanced Networked & Scientific Applications, UC Davis. Hobby also is a member of the Internet Engineering Task Force.
- Scott Bradner, Harvard University
- Scott Brim, Cornell University
- Steve Corbato, University of Washington
- David Wasley, University of California Office of the President

The NTTF Steering Committee: The National Telecommunications Task Force (NTTF) is the driving force behind Internet II. The NTTF is a subcommittee of Educom, a national consortium that promotes and supports the use of computing in higher education. The NTTF includes

See Fact Sheet on Page 2

Quotables

In the third generation of computers, "the focus will be on people and the tasks they want to accomplish, not technicalities."

— Donald Norman / Apple Computer
— Information Week / 9/96

Courtesy of Edupage

Universities Build Internet II

From Page 1

- **Remote Laboratories:** Scientists may conduct experiments remotely from their desktops. For instance, a researcher at UC Davis may use the Stanford Linear Accelerator without traveling to Palo Alto.

- **Desktop Astronomy:** Astronomers may remotely control telescopes at national observatories. From a mediated classroom, a professor may use a computer to control telescopes at the Lick Observatory while students view the images projected from the computer screen.

- **Telemedicine:** A radiologist at the UCDMC Cancer Center may send an x-ray to a specialist on the east coast and then discuss the diagnosis while both doctors are viewing the image on their computer screen.

The implementation of these applications will depend on a network design and series of protocols (see Internet II Fact Sheet) that fully exploit the capabilities of broadband networks. Higher transmission speeds, the ability to reserve bandwidth, and the opportunity to prioritize delivery will pave the way for reliable, real-time communications.

"Researchers are interested in applications that utilize real-time desktop communication, says Hobby. "The Internet as it now exists is designed for 'best effort' delivery," he adds, explaining that performance is highly dependent upon the amount of traffic. The heavier the traffic the slower the delivery. When traffic gets too heavy, information can be derailed.

With the explosion of network usage and the privatization of network services, gridlock is bound to happen. The Wall Street Journal recently reported that the number of households linked to the Internet doubled during the past year.

"We see tremendous growth not just in the number of people who use the Internet, but also in the kinds of applications that depend on network infrastructure," says Hobby. "When a new popular application comes out, we see a big jump in Internet usage."

Statistics gathered on e-mail and World Wide Web usage at UC Davis provide a snapshot of the demand for network services experienced throughout the nation. While the number of campus computer account holders has risen steadily, the traffic traveling across the UC Davis campus network has more than doubled in the past two years.

Class lists and online discussion groups are just two examples of applications that have given people new reasons to use e-mail — and more opportunities to send messages.

The World Wide Web provides a double whammy. Scores of followers attracted by the integration of text, graphics, sound, and video have migrated to the Web. Because transmitting graphics requires more bandwidth than plain text,

the Web has not only attracted new users, but users who carry lots of cargo.

"The implementation of new applications will depend on a reliable transportation model. In designing Internet II, our goal is to give researchers a roadway that provides a way around the traffic," says Hobby.

While the need for Internet II has been in discussion for over a year, the partnership between the 34 research universities who agreed to move forward with

the Internet II project was formalized on October 1, 1996. Carole A. Barone, Associate Vice Chancellor for Information Technology, is a member of the National Telecommunications Task Force steering committee, the driving force behind Internet II.

"This partnership between universities gives us an opportunity to further the development and usage of the Internet in an atmosphere of research and sharing," says Barone. "Private companies do not always have the luxury of working collaboratively with colleagues from other organizations."

"Our long-term goal is to move the developments made through the Internet II project into the private sector, in much the same way the Internet has migrated from public to private management," Barone says. By repeating the cycle, higher education remains in a position to discover and implement new opportunities, and individuals in the private sector still have an opportunity to benefit from those discoveries.

Among the research universities participating in the Internet II project are UC Davis, UC Berkeley, the UC Office of the President, the California State University system, Stanford, Penn State, and the University of Michigan. They will work with the National Sciences Foundation, IBM, Cisco Systems, AT&T, MCI, Apple, Sun and other industry leaders to implement Internet II.

Funding for the Internet II project will be supported by grants and in-kind donations of services and products. Each of the universities present pledged \$25,000 to fund the initial stages of the project. However, all participants will also be expected to contribute technical expertise and to have campus networks capable of interconnecting with Internet II.

Relying on the knowledge and expertise of those intimately involved with network design and research, Internet II will be a network thoroughfare that serves the needs of those in higher education.

"In designing Internet II, our goal is to give researchers a roadway that provides a way around the traffic."

—Russ Hobby

Internet II Fact Sheet

From Page 1

representatives from higher education and private industry. Members include:

- Carole A. Barone, UC Davis
- Gary Augustson, Pennsylvania State University
- George Badger, University of Illinois, Urbana-Champaign
- Ann Lee Verville, IBM
- Erv Blythe, Virginia Polytechnic Institute and State University
- Molly Broad, California State University system
- Jane Caviness, Educom
- Bill Graves, University of North Carolina
- Dave Lambert, Cornell University
- Bill Lewis, Arizona State University
- Stuart Lynn, UC Office of the President
- Polley McClure, University of Virginia
- Doug Van Houweling, University of Michigan
- Steve Wolff, Cisco Systems

Internet II Steering Committee: Guiding implementation of Internet II is a newly formed steering committee. Members include:

- Mike Roberts, Educom
- Bill Graves, University of North Carolina
- Greg Jackson, University of Chicago
- Rama Khanna, Stanford University
- Stuart Lynn, UC Office of the President
- Doug Van Houweling, University of Michigan

Partnerships: The universities participating in the Internet II project will work with the National Science Foundation, IBM, Cisco Systems, AT&T, MCI, Apple, Sun and other industry leaders to implement Internet II.

► Why Build It?

The Internet as it now exists does not support the high-level computing needs of research universities. New network protocols must be put in place to support high-speed transmission and real-time communication.

► How Will It Work?

Gigapop Design: The implementation of Internet II will revolve around what has been dubbed the Gigapop. The Gigapop is a connection point for Internet II institutions to connect to each other, research networks, and commercial networks. The National Science Foundation's vBNS network will be used initially to connect Gigapops. Gigapops will be strategically placed throughout the network and provide high-speed routing of information. Managed by higher education communities, Gigapops will guarantee end-to-end quality bandwidth between universities implementing Internet II standards.

New Protocols: Internet II protocols will allow high-speed transmission and guaranteed bandwidth.

- **RSVP:** This protocol allows you to reserve bandwidth on the network from your workstation to the computer to which you wish to connect.
- **IPv6:** This is a packet-delivery protocol that allows you to assign priority to information packets you send through the Internet. For example, you may want your Web search traffic to have a higher priority than your e-mail traffic, so that individuals sitting at their desk surfing the Web can enjoy a rapid response time.
- **Multicast:** This protocol will reduce network traffic by allowing you to send a single stream of information to multiple recipients. Under the current design, if you send a message to four different people, four identical copies of the information are sent over the network. Multicast sends only one copy of the message and replicates the information only at branch points in the network.

► Where Will It Go?

Internet II will connect all universities and institutions that implement Internet II network standards and are connected to Gigapops. Efforts to establish Gigapop systems are developing primarily as state-based consortiums. Since Internet II is backward compatible with the current Internet, users will be able to travel to any Internet location. However, information going to a non-Internet II recipient will be subject to complications of heavy traffic flow.

► Who Will Use It?

All members of the UC Davis community will have access to Internet II, which will be open to all institutions that implement Internet II network standards.

► When Will It Open?

The initial Gigapops and interconnections are part of the National Science Foundation's vBNS connection program, which will see implementations of the Internet II architecture next year.

California Campuses Embrace Internet II

In October, representatives from the University of California, the California State University system, Stanford, and the University of Southern California agreed to form a California organization to support the development of Internet II protocols.

"The purpose of this agreement is to build a California network that allows colleges and universities in California to connect to other universities participating in Internet II," says Information Technology's Russ Hobby, an active participant in the development of new Internet standards to meet the needs of higher education.

Members of the educational community have been discussing the need to provide better Internet services for the University of California and other California campuses for many months. This summer, the UC Office of the President negotiated a new agreement to expand network capacity to the Internet for all nine UC campuses.

If the newly formed California organization is successful in its mission, Hobby says, network services for California campuses may be consolidated into a single network.

"A consolidated approach would contribute to ongoing improvements by giving higher education institutions in California an opportunity to share resources and knowledge," says Hobby.

Network 21 Will Connect to Internet II

UC Davis negotiated a contract with 3Com Corporation to install the electronic components of Network 21, the high-speed fiber optic network scheduled to be fully operational next fall. The contract calls for the development of an ATM (Asynchronous Transfer Mode) switching design that supports high speed data transmission and the widespread use of interactive applications.

As a standard that can transmit both voice and data communications, ATM eventually will enable telephone calls and data communications to travel through the same router switch, allowing the two technologies to share the same facilities.

"The Network 21 design will pave the way for real-time network communications on campus, and enable the campus community to enjoy the benefits of Internet II standards," says Rodger Hess, Technical Director for Network 21.

"The goals we have outlined for Network 21 — high-speed transmission, reliability, and real-time communication — are shared by those developing Internet II," says Hess. "We will be working closely with 3Com to ensure that Network 21 meets new Internet II standards, enabling campus researchers to enjoy high-end communications with other Internet II universities."

PROJECT UPDATE

NetWork 21



Network 21 Orientations are being held in the Center for Advanced Information Technology (CAIT).

Network 21 Orientations

The thought of high-speed networking is becoming more of a reality as Network 21 Orientations introduce departments to the cutover process. Network Administrators and MSOs (Management Service Officers) are being invited to these information sessions, which outline the steps to either a first network connection or cutover to the new network.

Each department receives a Network 21 Guide, a collection of documentation designed to aid departments in their cutover process and planning. Information presented at the orientations includes an over-

view of the Department Planning Tool (DPT), the method by which departments will convey device inventory data to Information Technology.

Information provided by campus departments will be consolidated with other data to generate the detailed cutover plans required for each department.

A multimedia presentation is planned for future orientation sessions, which will be held in Shields Library in the Center for Advanced Information Technology. All orientation sessions share the same goal — to prepare departments for cutover to Network 21.

NAM Configurations

Campus departments will receive NAM confirmation reports prior to their scheduled Network 21 Orientations. Each report will include all buildings associated with a department.

NAM addition and modification figures are as follows: Approximately 900 NAM additions will be funded by the project, with 200 more to be departmentally funded. Network 21 will fund a total of 3,300 NAM modifications.

Departments are receiving two-week notification on NAM modifications and wiring installations. The Network 21 horizontal project team is contacting department managers and designated technical contacts with scheduling information.

Closet Construction Complete

The base contract for the construction of communication closets is now complete. Modifications are being made on some closets and should be finished by the second week of November. The construction of communication closets, the first phase of the Network 21 project, began on July 31, 1995. The project has upgraded electrical capacity and ventilation in the closets to conform to Network 21 standards.

If you have questions about Network 21, send e-mail to net21info@ucdavis.edu or go to <http://net21.ucdavis.edu/>

— Compiled by Aviva Luria

Network 21 Reaches Beyond Campus

The idea of networking has not been lost on Ricardo Carnauba. Inspired by Network 21's ATM design, Carnauba came here from Brazil to see how the campus will transition to the new high-speed fiber optic network.

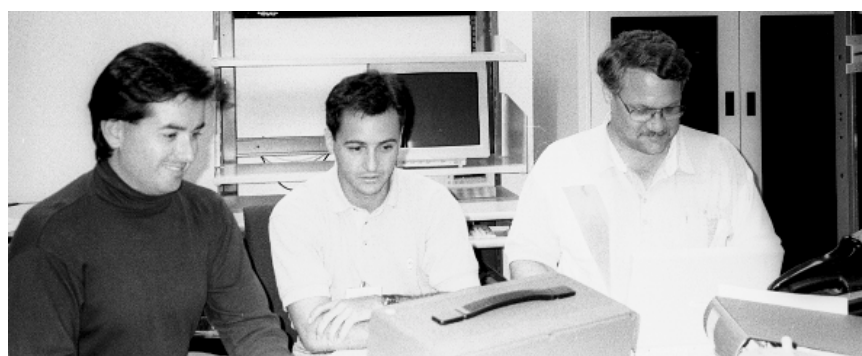
And he is taking notes.

An employee of Telebras, the Brazilian government-run communications company, Carnauba's job is to investigate new networking technologies to introduce in Brazil. Every year Telebras funds employee travel to other countries for technology research.

After discovering the Network 21 home page on the World Wide Web, Carnauba decided UC Davis would be a good place to be because of the integration of ATM technology into the campus network design.

Short for Asynchronous Transfer Mode, ATM is the term for the technical standard that permits the simultaneous delivery of voice, video, and data to the desktop.

Carnauba, who in 1979 spent a year at Davis High as part of a student exchange program, sent an e-mail message to Communications Resources expressing his interest in the ATM migration. He soon had a telephone interview with Communications Resources directors who



Ricardo Carnauba (center) studies Network 21 technology with the help of Network Analyst John Hess (left) and Network 21 Technical Director Rodger Hess.

determined that the exchange would be a good one.

Telebras is orchestrating the migration to ATM technology in Brazil. In fact, Carnauba's own department served as the site for the pilot program. While Telebras is waiting for a delivery of cabling that will allow them to expand this network, Carnauba is learning about the plans here at UC Davis to incorporate ATM switching into Network 21.

Shortly after his arrival in Davis, Carnauba sent e-mail to his supervisor. "I told him to slow down the migration and wait for me to come back." The delay in the cabling delivery might serve as a benefit, Carnauba says, because he will return home with knowledge to share.

"It's a beautiful migration plan, very detailed," said Carnauba, who

has studied the proposal submitted by 3Com Corporation, the vendor selected to install the ATM switching devices and other Network 21 electronics.

Carnauba is enthused about the opportunities ATM technology will bring to networking. "People won't have to have one cable for voice, one for television; they will be integrated," says Carnauba. "It will be a gigantic step in people's lives."

The successful integration of ATM technology, notes Carnauba, requires the amalgamation of many different areas of expertise.

And for these next few months, this shared knowledge has crossed borders, in small but important ways.

— Report Submitted by Aviva Luria

I.T. CALENDAR

NOVEMBER 1996

S	M	T	W	T	F	S
					1	2
3	4 Melvyl Library System	5 Internet/WWW	6 Eudora	7 Netscape	8	9
10	11 WWW Publishing	12 Bibliographic Databases	13 Advanced Melvyl	14	15	16
17	18 Intro to Eudora	19 Intro to Photoshop	20 Remote Info Access	21 Advanced Melvyl	22 Pointcast I-Server	23
24	25 Intro to Filemaker Pro	26 Excel Charts	27	28	29	30 Thanksgiving Holiday

Editor's Note: If you wish to enroll in a class offered by Staff Development & Professional Services, you must complete an Application for Enrollment. Applications are in the Staff Development Catalog. To request an application, call 752-1766.

NOVEMBER

- 4 Basic Melvyl Library System** - Commands to find books and journal articles at UC Davis: Library Instruction Programs, 3:10-4 p.m., Shields Library Microcomputer Room; e-mail vgw@ucdavis.edu or call 752-6439.
Student/Faculty Introduction to Eudora: Information Technology, 9-11 a.m., 14 Hutchison; learnit@ucdavis.edu or 754-8091.
- 5 Information on the Internet and World Wide Web** - Searching skills, resources and techniques: Library Instruction Programs, 3:10-4:30 p.m., Shields Library Microcomputer Room; e-mail vgw@ucdavis.edu or call 752-6439.
Introduction to PageMaker (two-part class offered Nov. 5 & 7): Staff Development and Professional Services, 8:30-11:30 a.m., 14 Hutchison.
- 6 Student/Faculty Intermediate Eudora:** Information Technology, 8:30-11:30 a.m., 1102 Hart; learnit@ucdavis.edu or 754-8091.
Personal Bibliographic Databases - Programs to manage your libraries and reprints: Library Instruction Programs, 5:10-6 p.m., Shields Library Microcomputer Room; e-mail vgw@ucdavis.edu or call 752-6439.
Remote Information Access - Communications programs, logging in, passwords, e-mail, downloading, special displays: Library Instruction Programs, 4:10-5 p.m., Shields Library Microcomputer Room; e-mail vgw@ucdavis.edu or call 752-6439.
Using a Microsoft Access Database: Staff Development and Professional Services, 8:30-11:30 a.m., 14 Hutchison.
- 7 Electronic Commerce:** CAIT, 2-3 p.m., 165 Shields, advancedit@ucdavis.edu or 752-5711
Information on the Internet and World Wide Web - Searching skills, resources and techniques: Library Instruction Program, 11-12:20 p.m., Carlson Health Sciences Library, e-mail vgw@ucdavis.edu or call 752-6439.
Student/Faculty Introduction to Netscape: Information Technology, 1:30-4:30 p.m., 1102 Hart; learnit@ucdavis.edu or 754-8091.
- 11 Information on the Internet and World Wide Web** - Searching skills, resources and techniques: Library Instruction Programs, 4:10-5:30 p.m., Shields Library Microcomputer Room; e-mail

vgw@ucdavis.edu or call 752-6439.

Introduction to Netscape: Staff Development and Professional Services, 1:30-4:30 p.m., 40 Mrak.

Introduction to Windows 95 (two-part class offered Nov. 11 & 13): Staff Development and Professional Services, 8:30-11:30 a.m., 40 Mrak.

Information Provider Series - WWW Publishing Level I: Information Technology, (two-part class offered Nov. 11 & 13), 6-9 p.m., 14 Hutchison; learnit@ucdavis.edu or 754-8091.

Information Provider Series - WWW Publishing Level II: Information Technology, (two-part class offered Nov. 11 & 13), 8:30-11:30 a.m., 14 Hutchison; learnit@ucdavis.edu or 754-8091.

12 Introduction to Microsoft Excel PageMaker (two-part class offered Nov. 12 & 14): Staff Development and Professional Services, 8:30-11:30 a.m., 14 Hutchison.

Personal Bibliographic Databases - Programs to manage your libraries and reprints: Library Instruction Programs, 4:10-5 p.m., Shields Library Microcomputer ; e-mail vgw@ucdavis.edu or call 752-6439.

Remote Information Access - Communications programs, logging in, passwords, e-mail, downloading, special displays: Library Instruction Programs, 3:10-4 p.m., Shields Library Microcomputer Room; e-mail vgw@ucdavis.edu or call 752-6439.

13 Advanced Melvyl Searching - Special features and techniques and tips for working efficiently: Library Instruction Programs, 4:10-5 p.m., Shields Library Microcomputer Room; e-mail vgw@ucdavis.edu or call 752-6439.

Apple & Claris Software: Center for Advanced Information Technology, 2-3:30 p.m., CAIT, 1st floor Shields. Learn about contracts and agreements available to the UC Davis campus community. Representatives from both Claris and Apple will answer questions. Call 752-5413 for more information.

18 Finding Journal Articles - Databases on and beyond Melvyl, including CD-ROMS - Library Instruction Programs, 3:10-4:30 p.m., Shields Library Microcomputer Room; enroll e-mail vgw@ucdavis.edu or call 752-6439.

Student/Faculty Introduction to Eudora: Information Technology, 6-8 p.m., 14 Hutchison; learnit@ucdavis.edu or 754-8091.

Web Servers for Windows NT: CAIT, 11 a.m. - noon, 165 Shields, advancedit@ucdavis.edu or 752-5711.

Working with Microsoft Word Mail Merge: Staff Development and Professional Services, 8:30-11:30 a.m., 14 Hutchison.

19 Introduction to Photoshop Image Manipulation (two-part class offered

Nov. 19 & 21): Staff Development and Professional Services, 8:30-11:30 a.m., 14 Hutchison.

20 Intermediate Eudora: Staff Development and Professional Services, 8:30-11:30 a.m., 40 Mrak.

Student/Faculty Introduction to Netscape: Information Technology, 9 - noon, 14 Hutchison; learnit@ucdavis.edu or 754-8091.

Remote Information Access - Communications programs, logging in, passwords, e-mail, downloading, special displays: Library Instruction Programs, 4:10-5 p.m., Shields Library Microcomputer Room; e-mail vgw@ucdavis.edu or call 752-6439.

21 Advanced Melvyl Searching - Special features and techniques and tips for working efficiently: Library Instruction Programs, 11-11:50 a.m., Carlson Health

Sciences; e-mail vgw@ucdavis.edu or call 752-6439.

Information Provider Series - Introduction to Administering an Electronic Mailing List: Information Technology, 1:30-4:30 p.m., 40 Mrak; learnit@ucdavis.edu or 754-8091.

22 The PointCast I-Server: CAIT, 11 a.m. - noon, 165 Shields, advancedit@ucdavis.edu or 752-5711

25 Introduction to Filemaker Pro Database Design (two-part class offered Nov. 25 & 27): Staff Development and Professional Services, 8:30-11:30 a.m., 14 Hutchison.

26 Working with Microsoft Excel Charts: Staff Development and Professional Services, 8:30-11:30 a.m., 14 Hutchison.

Brown Bag presentation on Transitioning to Windows 95: Staff Development and Professional Services, Noon - 1 p.m., Cabernet Room, Silo.

Grant Spurs New Networking Initiatives for the Davis Area

The Corporation for Public Broadcasting has awarded the Davis Community Network an \$80,000 grant to participate in the Civic Networking Initiative (CivNet).

CivNet will combine the efforts of UC Davis, Yolo County, the City of Davis, and the Volunteer Center of Yolo/Sacramento Counties with those of DCN to enhance the quality of community-based Internet services.

Vicki Suter of Information Technology, a long-standing participant in building partnerships between UC Davis and the Davis Community Network, will serve as technical project manager for CivNet.

Initially, a joint project by Caltrans and UC Davis to illustrate the "smart community" concept, the Davis Community Network assists community and government organizations in using the Internet for communication, information-sharing, and community problem-solving. Beneficiaries of DCN services include the City of Davis, Yolo County, the Davis Joint Unified School District, and other community-based organizations such as the American Youth Soccer Organization.

Scientific Computing Takes the Spotlight

Campus researchers and instructors kicked off the academic year with an all-day discussion of how to use scientific computing in their work. The occasion was the 4th Annual Colloquium on Scientific Computing and Data Analysis, sponsored by Advanced Networked and Scientific Applications.

Speakers from Stanford University, University of Nevada, Reno, the Teale Data Center, and the IBM Watson Research Center joined members of the UC Davis community in a series of presentations focusing on biological applications, spatial data analysis, scientific visualization, remote sensing, and applied mathematics.

Participating in the September 18 event were Steve Chan from Neurobiology, Physiology, and Behavior; Hemang Patel from Molecular and Cellular Biology; Sandy Harcourt and Gary Fannucchi from Anthropology; and Susan Ustin, Larry Costick, and

The \$80,000 award, which will be available by the end of September 1997, will enable DCN and its partners to develop four new areas of information services:

- An Internet-based community volunteer management and recruitment system (where participants can earn donated computers and services from participating agencies by volunteering their time and skills for community projects);

- Development of an education and outreach program at regional training and demonstration centers, including the UC Davis Sun TREC facility, newly-endowed by Sun Microsystems with over half a million dollars in equipment;

- A document database linked to the World Wide Web that will provide online access to complex documents (like the County Code); and

- Geographic information systems that will provide mapping information for citizens.

One of four projects chosen to participate in CivNet, the Davis Community Network was one of 120 applicants competing for the CivNet grant money.

Scott Martens of Land, Air, and Water Resources. Professor Wes Wallender of Land, Air and Water Resources showed videos produced using Data Explorer that illustrated his hydrologic models.

For information, send e-mail to vislab@ucdavis.edu or call 752-6285.



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Editor: Catherine Fehr Curran
Designer: Marianne Post
Masthead: Doug Gentry
Send e-mail to itpubs@ucdavis.edu

752-5965