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Special Issue: Staff and Technology

Integrating Technology Into Business Functions

New Skills for New Ways of Working

BY MICHELE PLATTEN

PERSPECTIVE

Perhaps nothing more vividly demonstrates the impact technology has on the workplace than the recent introduction and integration of DaFIS, the new campus financial system. DaFIS is just one technology-driven change in a continuum of past, present and future technological workplace integrations. Administrative applications on the scale of DaFIS challenge all of our technical competencies and fundamentally alter the way we get the business of the university done. These new administrative systems don't just automate the old way of doing things, they change the way business is conducted. As knowledge workers, UC Davis staff and managers are being asked to do more complex and subtle tasks involving problem-solving and critical thinking. It is important for us to pay close attention to the challenges posed by the integration of technology into core business functions, from the need for new skills to the need for new ways of thinking and operating.

In 1997, UC Davis sponsored the Partnership Forums series, which brought nationally renowned employment scholars to campus to talk about the effects of new technologies on the campus and on the individuals who have to learn how to use them. Sue Miller Hurst, educator and one of the top thinkers for business strategy and management, underscored the importance of life-long learning as the path to the future for individuals as well as organizations. Jennifer James, urban-cultural anthropologist and author of *Thinking in the Future Tense: Leadership Skills for a New Age*, shared her insights into technology's impact on the business and the culture of the university. She outlined eight building blocks for workers to understand and adapt to change. William Bridges, author of the seminal works *Managing Transitions* and *Jobshift*, described change as a significant event that is followed by a three-phase transition process consisting of an ending, a "neutral zone," and a new beginning. These speakers shared the perspective that technological change is redefining the global future and requires individuals to develop radically new characteristics and outlooks.

We are 18 months down the road from the insights provided by this cadre of experts, and in the midst of a huge, technology-driven, campus-wide transition that is revealing the challenges major change brings. One of the main challenges is that of training. As the primary means of accessing information, communicating, and processing core business functions, technology is a tool that we all must become adept at using to contribute to the work of the campus.

UC Davis has long supported campus-based technology training through the campus-sponsored Staff Development & Professional Services (SD&PS) program. SD&PS, in partnership with Information Technology, offers a technology training program that reflects both technical and management consensus about the essential skills and priorities for today's learning organization. The result of this collaboration is the development of a solid core of technology courses, ranging from operating systems to sophisticated database and desktop publishing applications. In October 1997, the Office of Administration, in partnership with the Office of the Provost and Information Technology, opened new staff technology training labs in TB 134 and 135. In addition to this specially designated space in which to hold traditional-style classes, a significant addition to this year's programming is Computer Based Training (CBT). This alternative to instructor-led learning supports efforts by staff to acquire or enhance skills over a broad range of technical topics — over 300 courseware titles are available for self-study.

By linking business objectives to the capabilities of a new system, we are challenged to consider new ways of working. This in turn leads us to question how to
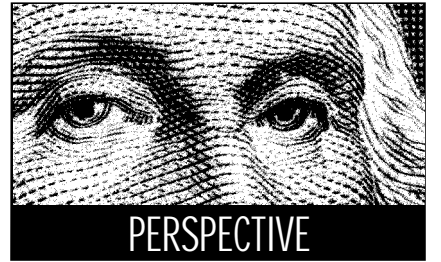

Computer Resource Specialist Rod Paulino tests out training materials at the Self-Paced Learning Lab in Hart Hall.

Photo by Xavier Foucaud

Operators Give UC Davis Personal Voice

By Richard Darsie

Callers to the main UC Davis telephone number are often surprised — not to mention relieved and delighted — to find themselves conversing with a "real person" instead of the all-too-familiar recording. As the first point of contact for the campus, UC Davis' team of telephone operators brings a welcome personal touch to campus communications.

The operators work for Directory Services, a unit of Information Technology's Communications Resources. Directory Services offers a number of functions critical to the campus: keeping the campus and UC Davis Medical Center directory (in both print and electronic form) up to date, ordering calling cards and commercial directories for UC Davis personnel, and answering calls to the main UC Davis telephone number.

Summer is always a busy time for Directory Services, for this is when the campus directory is produced for the upcoming academic year. Pat Elkins, manager of the unit, supervises this huge task, which requires several months of careful coordination, checking and editing.

"Keeping on top of the constant changes in campus departments and employees is a full-time job," says Linda Nixon, Directories Assistant.

A Team at Your Service

While providing directory assistance is an important function, the operators' service to UC Davis goes far beyond this aspect of their duties.

"We're not just telephone operators — we're the campus information center," says Sandy Peiffer, operator team supervisor.

The operators' job can be challenging. They must fill many roles, from simply redirecting calls to the appropriate campus department to reassuring worried parents of UCD students who haven't heard from their children for too long, helping new students get acquainted with the campus, and troubleshooting difficult or traumatic situations, including the occasional crank call. 911 calls and bomb-threat calls, which should go to the UC Davis Police Department, are occasionally misdirected to the op-

erators. "We face a new challenge every day," says Peiffer, recounting the time when a caller asked for 'Kerry' — no last name known. Miraculously, the operators were able to track her down. On another occasion, late one afternoon, close to 5 p.m., a woman called, desperately seeking a beef marinade recipe for a dinner party that evening!

The operators offer a variety of other telephone services to the campus, including operator-assisted conference calls and calls involving the deaf or hard-of-hearing.

The operators are highly conscious of the importance of good customer service. "We're here to serve the campus and the taxpayers of California," emphasizes Peiffer. This attitude permeates the entire team. They regularly go to great lengths to find answers for their callers, whatever the situation. For example, one caller sought instructions on the use of a home canner she had purchased; the call was quickly referred to the appropriate department: Food Science and Technology.

Humor and Team Spirit

What does it take to be a campus operator? "A sense of humor is essential," says Peiffer. Callers often reach Campus Information after prolonged and frustrating encounters with Voicemail menus elsewhere on campus. Handling annoyed or even angry callers demands restraint, interpersonal skills, and patience. Other valued qualities are grammar and communication skills, as well as a sense of teamwork. New operators train by sitting with experienced staff until they feel comfortable answering calls on their own.

"Teamwork is so important in this group," says Peiffer. "They're a close-knit group and go out of their way to help each other out." The team as a whole has a wealth of collective information and experience; individually they rely on each other for problem-solving. And, of course, there is a camaraderie that arises from the shared experience of being on UC Davis' "front lines."
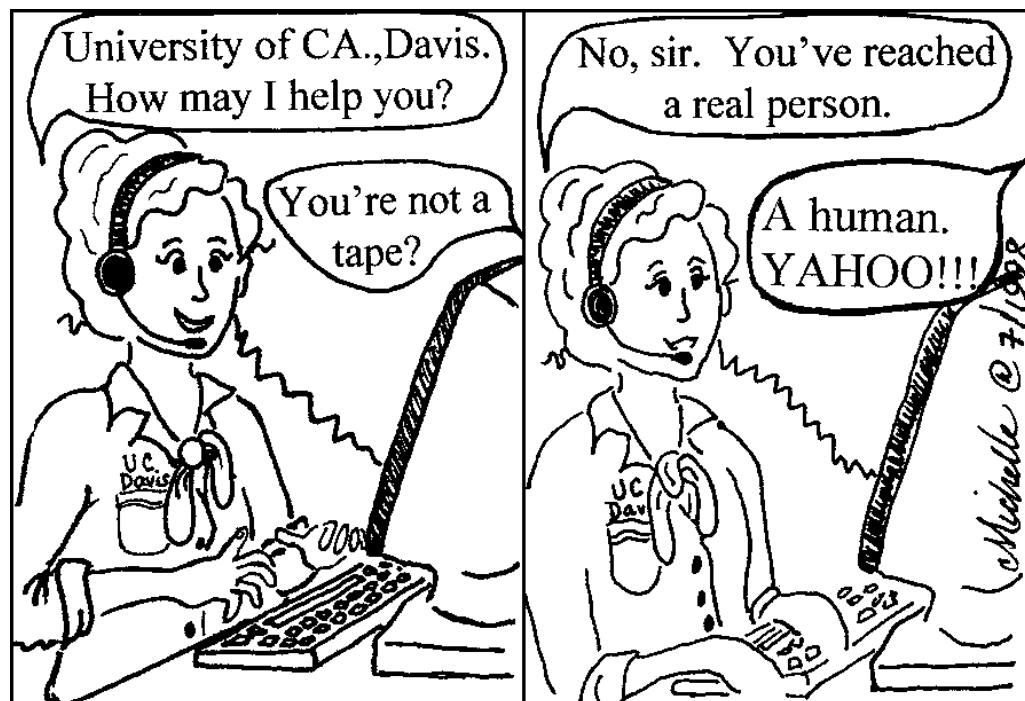
Cartoon by Michelle Hoglund, one of the artists on the campus operator team.

Creative Outlets

The operators come from a variety of backgrounds, and many hold other jobs to fill out their work week. They hold professions ranging from animal technician and X-ray technician to church secretary and artist. Many have found a relaxing outlet in creative endeavors like landscape design, seascape paintings, and cartoons.

With their operators' headphones on, they quickly switch gears to become computer-savvy, resourceful professionals. The heart of each operator's workstation is a CTI (computer-telephone interface) system that links a multiline phone system to a PC, allowing all the features of the phone system — plus added speed call features — to be accessed via the computer. A backup system is in place in case of computer failure. The same computer serves to transfer calls and access the Directory Retrieval System, the electronic version of the directory which is up-

dated daily. The system is very fast and sophisticated, allowing searches to be made by first name, last name, or any portion thereof. It places a vast information resource at the operators' instant disposal when responding to callers' queries. The operators can tell by looking at their monitor whether an incoming call is from on- or off-campus; this information can be crucial in an emergency situation. The database is an important resource for the operators, and so are their formidable powers of recall: an experienced operator knows a requested number from memory about 75% of the time.

The operator team answers an average of 6,000 calls each week. How glad are callers to connect with a real person? According to Peiffer, "one day, someone sang the Hallelujah Chorus!"

Pat Elkins, Zack O'Donnell, Linda Nixon, and Sandy Peiffer from Communications Resources contributed to this article.

DATA CENTER RELOCATION UPDATE

Delays in the bid process for the renovation of the former Repro Graphics building have pushed the relocation of Data Center equipment from Hutchison Hall to the new building further into the fall. The latest schedule established by Architects and Engineers indicates that the renovated facility will be ready for occupancy by mid-November. The first systems should be moved into the facility in late November, and the relocation completed by March 1999. A firmer schedule will be published when the bid process is completed in late August. For more information on the Data Center relocation, visit the Data Center Web site at *http://ir.ucdavis.edu/dc/*.

Directory Updates

Directory Services encourages all campus and UC Davis Medical Center members to submit their listing information. The deadline for submissions to the 1998-99 printed directory has passed, but the electronic directory is continually updated throughout the year. Inclusion in either directory is optional for individuals, but it is to your advantage to be listed, especially if you are new to the campus, so that the operators are able to locate you to transfer calls. Changes or additions to the electronic directory can be submitted at any time by filling out the directory update form available in the campus directory.

The 1998-99 directory is scheduled for distribution later this fall.

Scholarship Recipients Attend Technology Conference

Seven campus members enrolled in the Technology Support Program (TSP) were awarded scholarships by Information Technology to attend the 11th annual University of California Computing Services Conference (UCCSC) at UC Santa Cruz from June 30 through July 2. The purpose of the conference was to provide computing professionals from all nine UC campuses with the opportunity to meet and discuss computing support issues and strategies.

"The conference is a meeting of our peers," said Pat Kava, manager of IT Client Services, which administers the Technology Support Program. "It provides a valuable forum for exchanging ideas that have worked within the UC structure, and it's small enough to allow personal interactions to take place. That means Technology Support Coordinators (TSCs) and IT staff can meet each other and talk about local issues in a companionable atmosphere."

"Perhaps the most important aspect of the conference is that department technical support people come back with a greater awareness that UC Davis is doing things right and is actually in the forefront of the ways campuses support technology in higher education," Kava said.

Five of the scholarship recipients agreed to share their perspectives on the conference.

Phil Knopp, Internal Medicine, UC Davis Medical Center:

The conference began with group sessions, in which computing subjects common to all campuses were presented. First came presentations from representatives of the Office of the President on the California Digital Library and the Authentication Workgroup, then a series of group discussions that concerned site licensing of software, wireless connectivity, Web site construction, and email policy, among other topics. Finally came seminars on subjects such as spam, call tracking, and data projection. And this was just the first day!

The following day was made up of four more sets of seminars, ranging from databases on the Web, the CBT (Computer Based Training) rollout throughout the University, Year 2000 compliance, Microsoft NT support issues, campus-wide scheduling and calendaring, and many other issues. In all, it served up a pretty heavy helping of computer-related issues faced every day on campus. UC Davis as compared to other campuses is doing quite well. To our credit, we have rolled out both CBT and DaFIS, a major financial tracking system, upgraded email servers, and led the way to handling Year 2000 compliance. I think we are setting a leading example in these areas, and while we all have a way to go, the campus computing staff at Davis is meeting the challenges head on.

Bill Heekin, University Extension:

The conference provided an excellent opportunity to share computing developments and hindrances on multiple levels – campus-, department-, and system-wide. As one of over 30 computer support staff from UC Davis who attended, I participated in sessions that related to real-world situations in my departmental computing environment, including Windows NT Support, Remote Access Options, Help Desk Performance, Launching CBT Training, and Software Site Licensing. While the conference locale was great, it was incidental to the opportunity to discuss computing support concerns and to network with staff from other campuses and departments. I was particularly impressed by the number of sessions led by the UC Davis Information Technology/Information Resources staff (UCD appears to be ahead of the curve in many areas). In addition, the conference was an opportunity for me to have several

Four of the Technology Support Coordinators who attended the UCCSC Conference. From left to right: Phil Knopp, Tricia Marshall, Ron Purnell, Karen Kluge.

Photo by Xavier Foucaud

Top Ten Reasons to Join the Technology Support Program

If you provide technology support to your department and are not yet familiar with the Technology Support Program (TSP), read on and find out why 306 of your colleagues are now enrolled in this program.

The TSP is coordinated by the Division of Information Technology and is designed to help departments plan and implement the use of information technologies. The program was launched in Summer 1995 following the explosion of information technology use on the campus. Since then, participation has grown steadily. By July 1998, 198 campus departments had joined the program.

By enrolling in the TSP, you will become known as a Technology Support Coordinator (TSC) and will gain access to a number of services, including:

- **Ongoing training.** In 1997-98, approximately 50 courses were offered on a variety of topics, such as administering servers, technology consulting, developing a departmental technology plan, Perl, networking concepts, and supporting UC Davis administrative applications. The Fall 1998 list of courses will be available on the Web at *http://tsp.ucdavis.edu* in early September. Note: You have to be enrolled in the TSP to be able to access the list of courses.

- **An individual IT Representative** who acts as your personal contact if you are unable to solve a problem.

- **Special electronic support services.** You will be subscribed to two electronic mailing lists: one for announcements and the other for open discussion among TSCs. You will also have access to online documentation via the Web at *http://tsp.ucdavis.edu/*.

- **Outside technical support services and IT-sponsored events.** Many times these special events are scheduled early to provide TSCs with future product information that may help them anticipate or address departmental technol-

ogy concerns.

- **Invitations to IT-sponsored training sessions.** TSCs will often be provided with advanced training on products to help address departmental technology migration and transition concerns.

- **Gartner Group Research and Publications.** The Gartner Group is an information technology industry research group that provides services to the campus (at reduced fees) by arrangement with the UC Office of the President. Gartner Group consultants provide insight into current and future trends in information technology and the ways in which new information technologies may affect how departments will function in the future.

- **Participation in beta test programs** will give you the opportunity to evaluate and provide feedback to vendors on future versions of products.

- **Regularly scheduled informal TSC gatherings** provide a forum for focused discussion and problem solving on topics selected by TSCs.

- **Inclusion in the TSC directory.** A quick reference guide to all TSCs in the support network, including phone numbers, addresses, and email addresses.

- **Use of Computer Training Facilities.** As a TSC, you will be able to schedule time at an IT computer training facility to conduct computer training sessions focused specifically on your own department's needs.

Enrolling in the TSP will not in itself solve all your departmental computing and support needs, but it will provide a resource for good, reliable results. If you wish to join or obtain more information about the Technology Support Program, send email to *tsp@ucdavis.edu* or visit the TSP Web site at *http://tsp.ucdavis.edu*.

This article is adapted from information posted on the TSP Web site.

educational conversations with the UCD Information Technology Client Services staff.

Karen Kluge, Planning & Budget Office:

Attending UCCSC afforded me the opportunity to expand my perspective and to realize that those of us developing applications and supporting users on the various UC campuses face many of the same challenges, but have not all chosen to implement the same solutions. I found it very instructive to hear what my counterparts at other campuses have tried, what they liked, and what they

didn't like. I was pleased to learn that UCD has a reputation among the other campuses as a positive role model in many areas of information technology. And it was equally interesting to be challenged when I discussed approaches that we seem to take for granted locally, that we consider status quo, but others regard differently.

Tricia Marshall, Division of Education:

The most obvious benefit of the conference is

From Administrative to Computing Support: It's All About Change

BY AVIVA LURIA

Ask Roseanne Serrao and she'll tell you that making a career move entails a certain amount of risk. A combination of faith in her own abilities, avid interest in computing, persistence, willingness to learn, and hard work helped Serrao make a risk pay off.

As an administrative assistant in the Institute of Transportation Studies (ITS), Serrao had been hired to provide clerical support to the associate director. But she found herself drawn to the computing end of things.

Technical support for her department was provided by Engineering's Academic Computer Support unit (EACS). Serrao learned about maintenance and troubleshooting by watching the technical staff in action. In addition to assisting with the replacement of routers, Serrao installed new computer hardware, and took care of software downloads and upgrades for her co-workers. But when another administrative assistant left, Serrao was swamped. She had enrolled in the Tech-

nical Support Program, but performing her job duties in addition to another person's meant she had little time for classes. Instead, she studied on her own time.

"I used CBT [Computer Based Training courses] quite a bit for Windows NT, TCP/IP, and network concepts," Serrao says. "I bought a PC so I could take the CBT courses at home." The classes helped, but Serrao found it took hands-on experience for the lessons to be meaningful: "It's when you're out there doing it that things start to click for you." So she signed up for the CRS (Computer Resource Specialist) pool, a program that provides the campus with technically-skilled temporary workers. And she gave ITS her notice.

"It was a bold move," she says. "I had to sit my husband down and tell him I was quitting my job, because I'm the benefit holder in the family. But I thought that if I put myself in the position to be trained, I would learn."

Immediately upon Serrao's handing in her notice, the EACS team hired her, through the CRS pool, for a six-month assignment. EACS Director Tom Fortis says he was impressed from the start with Serrao's interest in learning about her office's computing systems. "She seemed to have an aptitude for many aspects of computer technology," he says. Serrao's administrative background came in handy. "She was the perfect person to deal with the problems that arise on a daily basis in the administrative offices," says Fortis. "Problems with email, word processors, and spreadsheets were most common."

Serrao credits Fortis and IT employees Tami Eastman, Debbie Edwards, Ann Mansker, and Pete Peterson with lending the support she needed to apply for technical positions. "When you don't have a degree or the professional experience, it's scary," she says. She was also held back by her own high standards. "I'd apply for jobs and when they'd call me for an interview I would thank them and tell them that I thought I needed more classes." Then a phone call came from Tom McCaw, MSO for the Department of Human

Physiology. McCaw said the newly-created programmer position Serrao had applied for allowed room for training.

"I said, 'Let me think about it and I'll call you back,'" says Serrao.

With encouragement by Fortis, Serrao did attend the interview and was offered the job.

"Roseanne is very ambitious by nature and has been anxious to learn the functions of her job description that she was inexperienced in," says McCaw, noting that Serrao

Photo by Aviva Luria

Computer programmer Roseanne Serrao and her supervisor, MSO Tom McCaw of Human Physiology.

had experience on the Macintosh side but lacked training on the PC side. "She's taken it upon herself to enroll in a myriad of classes offered through UC to educate herself."

"They have been so supportive and patient," Serrao says of McCaw and co-workers Roger Adamson and Dennis Waring, "and I'm always teasing myself and teasing them that I just don't know enough. I don't think you ever get to a point in this field when you become comfortable – things change every day. It's been a lot of learning and it's starting to feel like I'm of real assistance to them now. That was my main goal."

What are McCaw's feelings on hiring employees to learn on the job? "I personally have experienced very positive results," he says. "The employee feels that you have provided faith in their ability to learn and perform the job, and in most cases, the positive results are a reflection of this."

Serrao is preparing her department for Network 21 cutover in September and a host of new computer hardware that will arrive in the fall. "I find that in a new position, things change so much that you have to be very open to change," she says. "If you're willing to do that it works out well. It's all about change."

Creators of *Virtual Heart* Shine in Multimedia World

BY AVIVA LURIA

A favorite at both Odyssey '97 and '98, the School of Veterinary Medicine's Computer Assisted Learning Facility (CALF) creates innovative award-winning multimedia educational materials for veterinary students. Visitors to Odyssey '98 had the opportunity to view *The Virtual Heart*—a three-dimensional rendering of a canine heart—and *The Virtual Lung*, created by placing a video camera into the lung of a horse. *The Virtual Lung*, termed "expanded virtual reality" software, features even more close-up photography than *The Virtual Heart*, and enables the user to view, in three dimensions, the lung breathing.

Art, Science, and Good Marketing Skills

As for the brains behind these projects, the CALF team is made up of staff members Dave Magliano, Rick Hayes, Don Preisler, and Janine Kasper. Although all four are experienced multimedia programmers, each has his or her area of expertise: Hayes is a graphic designer, Preisler is a photographer, and Kasper is a doctor of veterinary medicine. "I'm the designated computer geek," says Magliano.

Most visible are Magliano and Hayes, who not only staffed the CALF booths at Odyssey, but also have made appearances and presentations at various conferences. In fact, the CALF serves as a type of marketing division for the School of Veterinary Medicine, both by having a presence at conferences, and by producing promotional posters and displays for the school, such as those on view at the Sacramento airport. Multimedia programs produced by the CALF are perhaps some of its best marketing yet—twelve (about 5% of the total number) can be purchased through the facility's catalog. At last month's American Veterinary Medical Association convention, where the CALF had a booth promoting its software, Magliano and Hayes demonstrated programs to veterinary schools, animal health technician programs, private practice veterinarians, and students. Sales have been steady over the past five years, but have picked up substantially this year with the addition of Windows titles to its list of Macintosh ones, Magliano says. Proceeds from the sales, after faculty royalties, are recycled into development of new programs.

Why Multimedia Educational Software?

The CALF was instituted in 1991 by then-Associate Dean of Academic Programs George Cardinet III to provide instructional support to the faculty of the Department of Anatomy in the School of Veterinary Medicine. The CALF's first programs were designed for anatomy instruction but soon were in use schoolwide. Now CALF-produced software, ranging from simple programs created in an afternoon to more complex ones that have taken years to complete, is used in

roughly 50 courses at UC Davis.

What are the advantages of programs over textbooks? First off, says Magliano, most veterinary textbooks have few color photographs. "The computer is the cheapest way to deliver hundreds of full color images," he says. Convert a recent program containing 2,500 color photos into a textbook, and each book will cost around $300, he says. A further advantage is the speed of delivery. Information can be made available to students very quickly, and this information can be customized. "And the programs let you do things that you can't do any other way – simulations, for example," says Magliano.

Compared to the hundreds of medical schools, there are only 31 veterinary schools in the United States and Canada. This rather small market means that producing educational software for veterinary medicine students is not commercially viable for most private companies. This, coupled with the fact that the CALF tailors its software to professors' and students' needs, makes its products extremely valuable.

"There aren't many other vet schools doing this," says Magliano. "Our faculty occasionally purchase programs outside, but these usually aren't designed for the professional veterinary medicine curriculum. Most of the programs our faculty use are customized here."

A Behind-the-Scenes Look

Talk to Magliano and Hayes, whose enjoyment of their work is evident, and you may come away with the impression that producing multimedia is easy. In truth, it requires

expert skill, tremendous patience, and meticulous teamwork. *The Virtual Heart*, which was funded by a grant, was produced on a strict two-month deadline. A team of five to six people tackled the various aspects of the project, from "VR" (virtual reality) photography to design of the user interface, content, and programming. "There was a lot of overlap between these jobs," Magliano says. "The content person had to know what interface he had to fit his information into. The programmer had to know what kind of data he

Representation of the Virtual Heart developed by the CALF team.

was going to get from the VR people. We overlapped and cross-trained, but everyone was responsible for a piece of the puzzle."

Unusual Career Paths

Neither Magliano nor Hayes followed what might be the typical career path of a computer specialist. Magliano graduated from UC Davis with a BS in biological sciences. Then, while a lab technician on campus, he did graduate work in computer science at Sacramento State, and built one of the first PC-based image processing systems on the UC Davis campus in the mid-1980s.

Hayes, who studied zoology with a minor in art, worked as an illustrator, graphic designer, and paintbox artist (graphic designer for video), before returning to UC Davis to work at Creative Communication Services. He has been at the CALF for about five years.

What are the qualities that make a successful CALF team member? "We like to learn new things," says Magliano. "Every project we undertake we try and push the envelope a little farther, get some new technology in front of the students, provide tech-

niques or approaches that weren't otherwise possible. Projects that we're working on right now, we couldn't have done even last year."

Last summer, for instance, Magliano and Hayes began *International Animal Health* on CD-ROM. The large amount of video involved precluded them from making it a Web-based application. Now, with the advent of new formats for streaming audio and video, they are converting the application from CD to the Web. While they'd like to have time to update each program in their library, they acknowledge that the technology driving some of the older programs meets the needs they were designed to accommodate.

For instance, one of the first programs produced by the CALF was *Canine Osteology: an Interactive Atlas*, which illustrates the bones of the dog. "People are still buying it, and it was published in 1992. It's still our best-selling package, and that's because it's up to the job," Magliano says.

"If we were going to re-do it today I'd use virtual reality and all the bones would rotate around. This is something we wanted to do at the time but couldn't," he says.
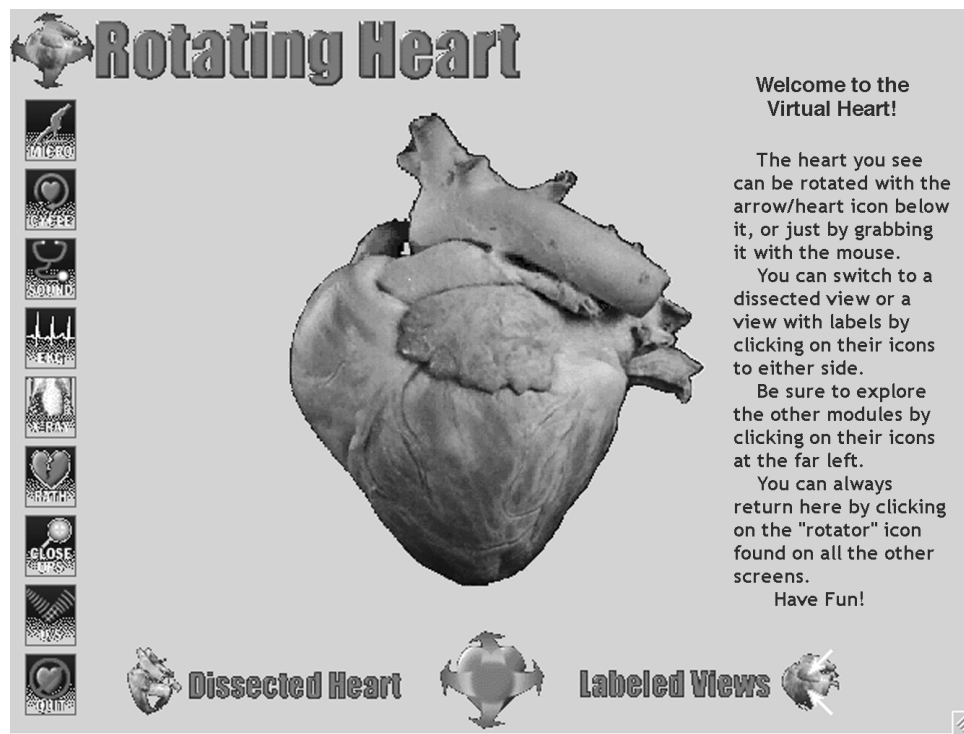
Keeping Pace with Technology

What keeps Magliano and Hayes motivated? Both say they find their jobs fun and satisfying. By teaching a required first-year computing class, they meet all incoming students. "Every class is a little more computer-savvy than the previous one," says Magliano. "It puts the pressure on us to keep up with what's current," Hayes adds. The CALF team receives a good deal of positive feedback from both students and faculty.

To keep up with ever-evolving technologies, the staff consults the World Wide Web. Print magazines become obsolete too quickly, says Magliano. "I spend about the first hour of every morning on the Web, getting up to date on what's current for the day." He and Hayes don't often have a chance to interact with other technology professionals, so newsgroups and mailing lists are extremely helpful. Here they get first-hand evaluations of specific software packages from the "hardcore user base. In the old days, I'd go to the MacWorld conference every January to find out what was new," Magliano says. "Now, through the Web, we know exactly what's going on everywhere."

Hayes says one of the most gratifying aspects of his job is "looking at something you've been working on, whether for an hour or a year, and seeing it functioning. It's like getting instant feedback."

Says Magliano: "When you can actually make something and see it finished, you feel as though you've contributed something."

Visit the CALF on the Web at http://www.calf.vetmed.ucdavis.edu

ERGONOMICALLY SPEAKING

BY JANET FORD, PT, MS

Get Moving

With 200 bones controlled by over 600 major muscles, our bodies were designed for movement, not sitting relatively still in front of a computer screen. Luckily, there are a number of ways to incorporate movement into your day.

- Take "micro-breaks." Most effective when taken as often as once per hour, micro-breaks are short 30-60 second breaks that allow you to change body positions. Micro-breaks are especially helpful if you perform continuous computer work, and they give you an opportunity to do one or two of your favorite stretches. For example, the sunflower exercise, shown at right, relaxes and stretches tense muscles.

- When possible, arrange your schedule to allow for a variety of activities. Intersperse standing and walking activities, such as making copies or retrieving files, throughout the work day instead of saving them for a single time block.

- Stand whenever possible — when retrieving items in an overhead cabinet, when on the phone, when helping a client, or when discussing issues with a colleague.

- If you're facilitating a meeting, incorporate a 30-second standing break midway through to serve as a stretch break and to improve participant alertness.

- Avoid computer-related activities or sitting during longer breaks or lunch. Instead, choose activities that require you to stand or move about. Get out and exercise, whether you walk, run, swim, or simply run an errand. Take the stairs rather than the elevator.

- Try to incorporate 20-30 minutes of movement or exercise most days of the week. This could include activities like gardening, or exercises such as walking, biking, or swimming.

- Learn to listen to your body. If it feels tense, stiff, or tight, MOVE!

To request an instruction sheet with additional stretches for computer users, please contact the Health Awareness Program at *healthaware@ucdavis.edu*.

Environmental Health and Safety Web Page: *http://ehs.ucdavis.edu/ergback/*.

Send questions about ergonomics to *ergonomics@ucdavis.edu*. All correspondence will be kept confidential.

Stretching at Your Computer or Desk

Health Awareness Program
(530) 752-1984
http://hr.ucdavis.edu/ehealth/haware.htm

Shoulder Circles:
Shrug shoulders toward ears, then rotate them back and down in a circular motion. Repeat 3-5 times.
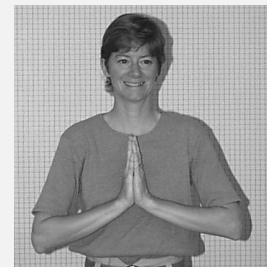

Head Nod:
Clasp hands behind neck. Tuck chin down slightly. Hold 5 seconds. Return to upright. Repeat 3-5 times.

Full Arm Movements:
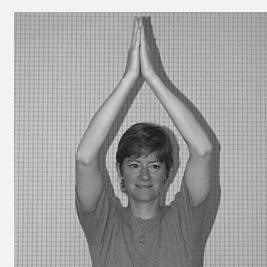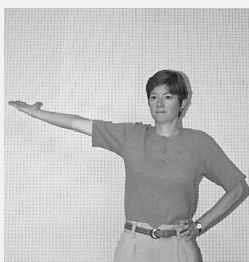With hand on opposite hip,

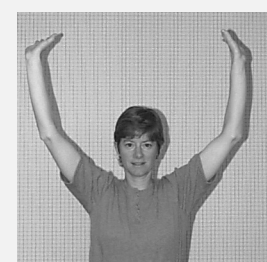
Sunflower:
Begin in prayer position.

raise arm across body while turning palm to the sky.

Breathe in and raise arms.

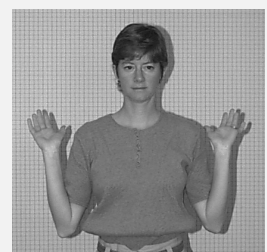Continue moving arm down then back to side. Repeat 3-5 times.

Separate arms and move them to the sides while breathing out.

Front Neck Stretch:
Place hands just below collar bone. Tilt head toward opposite shoulder, then lift chin slightly. Hold 10 seconds.

End in position shown.
Repeat 3-5 times.

Books:
Stretching at Your Computer or Desk, by Bob Anderson. Available for check out through the UCD Health Awareness Program by contacting *healthaware@ucdavis.edu*. Available for purchase through Shelter Publications (*http://www.shelterpub.com/*).

Handouts:
Stretches for office workers developed for the UCD Health Awareness Program.
Contact *healthaware@ucdavis.edu*.

Online Book:
Stretching and Flexibility: Everything You Never Wanted to Know, by Brad Appleton.

http://www.enteract.com/~bradapp/docs/rec/stretching/stretching_toc.html
Very detailed treatment of this subject. No illustrations, but extensive descriptions.
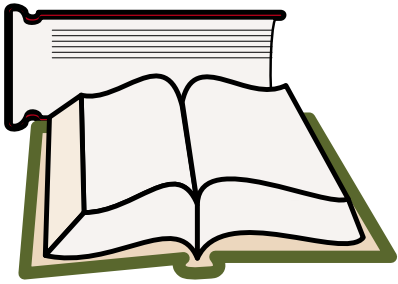
Desk Stretches:
http://www.shelterpub.com/_fitness/_desk_stretches/desk_stretches_large.gif
Illustration of simple exercises to do at your desk.

BOOK REVIEW

DATA SMOG:
Surviving the Information Glut
by David Shenk
Published by HarperEdge, 1997
Reviewed by Nancy Harrington

These days it's easy to feel overwhelmed by the need to make decisions and fulfill responsibilities in both our work and personal lives; so much to worry about, so little time! Even our own campus has a special task force focusing on staff workload issues that most of us are all too aware of. In his book, *Data Smog*, David Shenk, media scholar and Internet enthusiast, suggests that our environment is polluted with too much data — data generated by technology. He sets about describing to us the connection between data escalation and a variety of social and physical ills, including attention deficit disorder, loss of civility, lack of privacy, and even road rage.

Shenk includes both anecdotal and statistical citations about unanticipated effects of some technologies. In one example, a woman's fax machine worked too well. She began to notice that "it transmitted information across the country and world so quickly,

...becoming a kind of taskmaster that insisted on faster and faster work," reminiscent of Charlie Chaplin's movie, *Modern Times*. Now, of course, fax transmission seems hardly zippy at all compared to the rate at which information traverses the Internet. But consider how many of us grow irritable waiting the few moments it takes our lunch to heat in the microwave, or for the light to turn from red to green.

While much of Shenk's book focuses on information and its relation to politics, government, and journalism, a small portion does address effects of too much data in the workplace. "In the office, an average of 60 percent of each person's time is now spent processing documents," Shenk states. "Two-thirds of business managers surveyed report tension with colleagues, loss of job satisfaction, and strained personal relationships as a result of information overload." Shenk fails to provide comparative statistics from, say, ten years ago that would help support his contentions. Nevertheless, many of the phenomena he describes

are likely to sound familiar to any of us:

- Fewer and fewer silent moments as the media become pervasive—TVs in shopping malls, pagers in movie theaters (reminding me of my own experience in line at the post office when the customer at the counter kept the postal worker waiting in order to take a call on her cell phone).

- A correlation between higher levels of sensory inputs and decreased willingness to help strangers (goodbye, Good Samaritan!).

- A correlation between higher levels of information and people's increased confidence in their judgments... with no corresponding increase in accuracy.

One particularly chilling bit of research Shenk shares indicates that one-third of people surveyed would be willing to lose one of their fingers rather than give up the use of their computer for the rest of their lives. "[T]echnologies become extensions of our bodies," he writes.

Does Shenk offer us any solutions to these difficulties? Indeed, he suggests four general antidotes to data smog:

- **Be your own filter:** Turn off the TV, avoid "news-nuggets," leave the pager and cell-phone behind, get off junk mail lists

(Shenk tells you how on page 223). These actions can help you regain control over the pace of your life.

- **Be your own editor**: Limit your own output of data, avoid sending frivolous email. We should "be more economical about what we say, write, publish, broadcast, and post online." Limiting the information we need to sort through can result in greater civility as "people feel less need to be sensational to attract attention."

- **Simplify**: Think about which technologies you really need and embrace the simplest ones that can get the job done. Choose those "tools whose function anyone can plainly understand."

- **De-nichify**: Read general interest magazines, avoid specialized jargon.

Shenk's solutions seem tepid at best against the formidable descriptions of the difficulties he sees. And although he rejects the label of neo-Luddite, his lengthy description of using a "pin-hole camera" to illustrate simplicity certainly made me wonder.

Still, books of the genre that examine the unintended and sometimes unnoticed consequences of technologies (Postman's *Technopoly*, Stoll's *Silicon Snake Oil*) generally do contain thought-provoking notions and provide some measure of balance to our growing love affair with data. This book is no different. It's an easy and interesting read, especially for anyone who hasn't thought about the topic until now.

Nancy Harrington is Human Resources Coordinator for the Division of Information Technology.
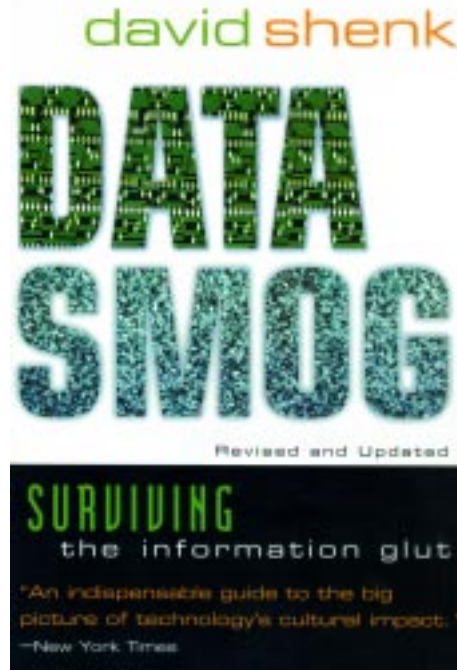
This month, "At Home on the Web" features a single site, from the Aquaculture and Fisheries Program. In addition to the description, we offer a perspective on the site from those responsible for creating it.

The Center for Special Programs serves as an umbrella for related programs that focus on a specific subject or species. Each of the current programs — Aquaculture & Fisheries, the Center for Animal Welfare, the Center for Avian Biology, the Center for Range and Forested Ecosystems, and the Contained Research Facility Project — brings together a diverse group of University faculty and researchers. To better disseminate information about each of these programs, administrative support staff Jan Campbell and Nicole

Gibson teamed up with Rob Brower of Web Design Services to design and implement a series of individualized Web sites.

"Jan and I had specific ideas about layout, design, and content of the Aquaculture and Fisheries Program (AFP) Web site, but we needed a professional Web design person to make our ideas work," says Nicole Gibson. "Neither of us had the time or knowledge to put our ideas on the Web, and we didn't want to take HTML classes. On the introductory page, we wanted a series of buttons in the form of graphics illustrating the content of the pages they linked to." The pictures were transformed from Microsoft Publisher files to HTML documents. The text is based upon existing documents produced over the lifespan of the AFP (20 years). "We wanted to convey the background of the programs, related research, services offered, useful information and links for the general public, and resources for prospective UC Davis students," says Gibson.
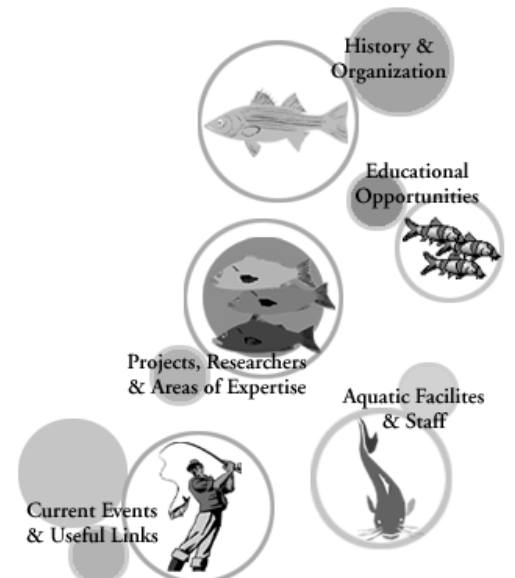
A home page for the Center for Special Programs eventually will link together the sites for the five programs, allowing new sites to be added in the future.

Main screen of the Aquaculture and Fisheries Program Web site, found at http://aquafishprog.ucdavis.edu/.

CALENDAR

http://it.ucdavis.edu/calendar/

Visit the IT Calendar online for a schedule of events during the coming month.

Business Functions

develop what are sometimes radically new skill sets required by these emerging technologies. Staff Development and Professional Services, together with IT Training, is committed to helping UC Davis employees and departments meet these challenges head on, first by recognizing the inevitability of and need for change, by examining and transforming our perspective, and by developing and enhancing our skills.

Michele Platten is co-manager of Staff Development and Professional Services.

August 1998

24   Document Management: An Introduction: 11:00 a.m. - 12:00 noon, Center for Advanced Information Technology, 165 Shields Library, 752-5711. Document Management is the process of organizing all of your documents (paper and electronic) to increase accessibility and usefulness (e.g., by categorizing, storing, and recalling information more effectively and efficiently).

26   Computer Viruses: 1:00 - 2:00 p.m., Center for Advanced Information Technology, 165 Shields Library. Every computer user today should be aware of the potential dangers of viruses. This presentation gives a comprehensive overview of computer viruses.

Resources

The books referenced in this article are available for checkout by university staff at SD&PS (located in TB 121):

- Bridges, William. *Managing Transitions: Making the Most of Change*, 1991.
- Bridges, William. *Jobshift: How to Prosper in a Workplace Without Jobs*, 1995.
- James, Jennifer. *Thinking in the Future Tense: Leadership Skills for a New Age*, 1996.

For more information on SD&PS resources, call 752-1766 or visit the Web at *http://sdps.ucdavis.edu/.*

Conference

learning about current computing issues at each of the campuses. But the intangibles are even more beneficial — such as meeting other technical support personnel to exchange ideas and solutions.

In my opinion, one of the most interesting uses of technology by one of the UC campuses is UC San Diego's internally developed GenericLink. GenericLink is a Web application development tool intended to give all of the campus Web-based applications a consistent look and feel. The Web-based engine was designed to be easy for non-programmers to use, and has already been used to develop such applications as StudentLink, TravelLink, EmployeeLink, FinancialLink, and DataLink. Making each of these applications Web-based means that they work on any platform with a Web browser, thereby avoiding platform compatibility problems such as those faced by users of the Financial Information System at UC Davis (DaFIS).

For an overview of GenericLink, see *https://mendel.ucsd.edu/cgi-bin/genericlink.pl/901502695/Node59694.*

Ron Purnell, Mechanical and Aeronautical Engineering:

It was reassuring to learn that staff at all nine UC campuses is grappling with many of the same issues that we are, and hearing ideas and solutions from our peers at other campuses was a valuable experience. Because Network 21 was delayed for a year and we had just finished the first year of implementing a new financial system (DaFIS) and the inherent difficulties of such a large change, I went to the conference wondering how well UCD would stack up against the other campuses in terms of our computing environment. I came away feeling we were among the best. We are doing more with remote access (RAMP), dormitory connectivity (ResNet), staff computing support (TSP), and advanced email services (IMAP servers) than many of the other campuses. I especially enjoyed learning that UC Davis leads the way in CBT (Computer Based Training). Other campuses are getting started with it, but the offerings we have here are tremendous.

The 1998 University of California Computing Services Conference Web site is at *http://www2.ucsc.edu/uccsc/.*

TRANSITION

IT Director Appointed
Director, California Digital Library Technologies

Joan Gargano was appointed Director of the California Digital Library (CDL) Technologies, effective September 1, 1998. In her new position, Joan will provide leadership for the technical design and implementation of the California Digital Library. A collaborative effort of the nine UC campuses, the California Digital Library (CDL) is housed at the University of California Office of the President, which is responsible for the design and creation of systems that support the shared collections of the University of California.

Joan Gargano is the Director of Distributed Computing Analysis and Support (DCAS), one of six departments of the Division of Information Technology. In that position, she is responsible for advising the campus and Information Technology on networked systems architectures and applications; systems design, planning and support; and advances in technology that will have a substantial effect on campus computing in the next few years.
She has played a key role in campus and Universitywide strategic planning for information technology, including serving as chair of the Universitywide Authentication Workgroup. She has also been active in national and statewide information technology and policy initiatives, including participation in the Coalition for Networked Information Initiative on Institution-Wide Information Strategies, the Golden State Education Network Communications Task Force, the Internet Engineering Task Force, K-12 Workgroup, and the Instructional Technology Networking Consortium.

Ken Weiss will serve as the interim director of Distributed Computing Analysis and Support.

The California Digital Library can be found at *http://www.cdlib.org/.*

NEW TSP COORDINATOR

Tecoy Porter was recently hired as the new Coordinator for the Technology Support Program (TSP). Tecoy comes to UC Davis from Project Coordinator and Senior PC/LAN Technician positions with Aerotek Data Services Group and served as Computer Training Administrator for SMUD for three years. Tecoy holds an MBA from California State University, Sacramento. He started in this position on August 18, 1998.

For more information on the Technology Support Program, see page 3 or visit the TSP Web site at *http://tsp.ucdavis.edu/.*

IT TIMES

Information Technology UCDAVIS