



Conference Chair Betty Bengston (left) beams at the end of four days of successful programs. Right, keynote speaker Michael Schrage signs a copy of his book *Shared Minds for UC/Irvine's Diane Bisom*.

Internet intensity

"The Internet has probably been one of the most significant changes in my professional life," observed Arizona State University's George Machovec at the program on "Navigating the Internet (And You Thought Columbus Had It Rough)." Apparently his assessment of the network's importance was widely held, since the program was one of the most heavily attended of the conference.

Machovec discussed aspects of the Internet that librarians need to warn their patrons about before they use it to access remote systems, including the scope and content of the databases, limitations for locally loaded journal indexes, dissimilar search protocols, and unfamiliar logon and logoff procedures.

Dennis Reynolds of the CAPCON library network focused on the provision of access to Internet for those not affiliated with universities (or "how the other 98% live"). "It's been very frustrating for those of us outside academia," said Reynolds, "because there hasn't been anyplace to go for Internet access." He discussed the "emerging Internet industry": the growing number of nationwide commercial providers as well as "niche providers" such as library networks.

George Brett of the University of North Carolina/Chapel Hill spoke on various models of accessing the Internet, particularly UNC's Kudzu project, a clearinghouse to collect, classify, and share documentation and training materials.

Introduced by moderator Jean Armour Polly as "Mr. Internet himself," Paul Evan Peters discussed the past year's developments regarding the National Research and Education Network (NREN). He observed that "there's plenty of time and lots of need" for librarians to offer leadership in developing navigational tools for NREN; the fact that it's not happening nationally

is an opportunity for librarians and other information resource managers, who, said Peters, should begin to think of themselves as "Internauts."

Pioneer women

The "Four Women in Automation" spotlighted a quartet of pioneers who, in moderator Michelle Dalehite's words, "played an incredibly important role in much of the technical infrastructure that we take for granted today." The first, Admiral Grace Hopper—the creator of the COBOL programming language—had been invited to the program but died last year; a "60 Minutes" segment on her life and work was shown.

Henriette Avram, who retired from the Library of Congress last year, discussed her career from her beginnings as a computer programmer at the National Security Agency in 1962 ("At that time," she said, "there were only 100 such individuals in the whole world") through her 26 years at LC, where she developed the MARC cataloging format ("To the best of my knowledge it's the last national automation project that came in on time").

A session on computer viruses told librarians how to vaccinate their PCs against attacks. Demonstrating are (from left) Monica Ertel, Jean Armour Polly, Ed Valauskas, Avi Rappoport, and Bill Vaccaro.

If Avram is the Mother of MARC, said Dalehite, then Velma Veneziano is "the Mother of NOTIS." Librarian emeritus at Northwestern University, Veneziano gave a nonchronological, impressionistic presentation conveying the flavor of the early days of library automation that told what it was like "to be thrust into a new environment where you know the possibilities are unlimited." She added that some of her audience would be facing the same sort of situation in the *next* 25 years, when, just as she had to convince others to break out of the "punch-card mentality," they will have to break people out of the "data-processing mentality."

Taking a different tack, INCOLSA's Barbara Markuson related the early days of library automation with humor, giving a highly anecdotal, tongue-in-cheek overview of her experiences in the field, particularly in her efforts to make OCLC available nationwide. An example of Markuson's irreverent approach: the reason so many women were involved in early automation projects, she claimed, was that "the 50% you could save by hiring women could go for something *really* important, like equipment." □



about electronic communication and observing that the “powers-that-be are only beginning to wake up to the potential,” Rheingold said that librarians should play a central role in trying to influence policy. People who don’t have computers in their homes need someplace to go for access, he said, citing the need “to find some sort of trusted guardian of that part of the commercial sphere”; public libraries, he observed, are still “institutions of trust.” He warned that if libraries don’t get involved, he saw privatization by the “big companies” who will have the field locked up.

Facing (virtual) reality

Following his morning remarks on virtual communities, Rheingold took part in an afternoon program on “virtual reality”: the use of computer technology to create an artificial world. He cited three elements involved in virtual reality: immersion (the world surrounds the participant), navigation (rather than passive experience of the world), and manipulation (control over elements in the world). Current applications of the technology include cockpit simulation flight exercises, computer-aided architectural design, and scientific visualization.

Paul Evan Peters of the Coalition on Networked Information stressed the value of VR technology as an instructional device by drawing a distinction between the two ways that knowledge is communicated. “Say-how” communication (for example, books) is passive, and information is always lost, said Peters; some types of in-

formation are better conveyed through a “show-how” technology such as VR.

Agreeing that VR will eventually become highly successful as an entertainment and instructional device, the University of California’s Clifford Lynch focused on the technology’s potential for libraries and information retrieval. Two major possibilities, he observed, are as a user-interface technology to established masses of content, and as a source of new content itself.

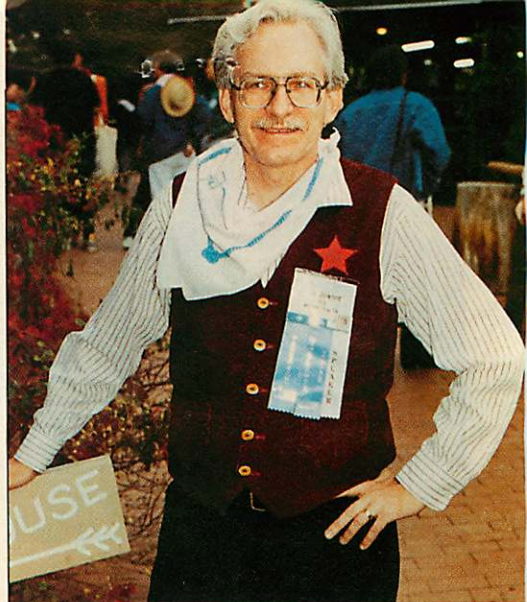
Although VR technology is now generally presented as a one-on-one conversation between a human and a computer, Lynch said he is intrigued by the possibility of networked distribution of VR to groups of people, with “the ultimate realization of creating virtual communities of people who are sharing information, experience, and space.”

The latest in electronic libraries

Opening a program on “The Electronic Library” (although he said he had considered naming it “The Virtual Library”), moderator George Machovec of Arizona State University gave an overview of trends in providing electronic access to information, including local loading of databases in OPACs; community files listing local clubs, political or statistical information, or other information; graphics, imaging, and multimedia; networking and telecommunications (which Machovec termed “the real key to the future”), client/server architecture (“mainframes are out”), local front ends using graphical user interfaces; and expert systems.

Denise Troll of Carnegie Mellon University said that the goal in building an electronic library is to eventually move *everything*—the bibliographic infrastructure and the contents of the collection—to the desktop computer. The problem is that the technology and the ideology of libraries are different from that of computers, with libraries remaining print-bound. “We’re trying to move people from a print mentality to a computer mentality,” she observed.

Joel Hartman and Ellen Watson described the Information Support System developed at Bradley University, which Hartman said was designed to demonstrate that the library is “not merely a player but also a leader” in the realm of information. The system currently features an OPAC, CD-ROM, and local and online databases and indexes. In the future the library hopes to implement an image database server and develop a campus outreach effort to make the services available outside the library.



LITA President Walt Crawford was one of the many attendees who donned western garb for a banquet at the Flying W Ranch in Colorado Springs.

The final project on the program was the extensive system developed by the Pikes Peak Library District. In addition to the electronic card catalog, said Systems Officer Tom Mihalic, it offers community connection-type databases (including a regional events calendar, lists of social service agencies, local social and economic indicators, and child care providers); online reference sources; newspaper and journal indexes; and local government information. The next step, said Mihalic, will be the addition of a sample copy of the county election ballot and self-service checkout and renewal of books.

Fear of the artificial

“These kinds of technologies cause fear and anxiety. Some people see them as a panacea,” said the National Library of Medicine’s Tamas E. Doszkocs at a program on artificial intelligence (AI) and expert systems. But they’re really just tools, he observed, albeit more advanced than most others. Noting that it will be a long time before we have working AI systems in libraries, Doszkocs described the principles behind the artificial neural networks that simulate humans’ nonrational intuitive processing.

Following Doszkocs’s presentation, Pamela Mason described the National Agricultural Library’s PlantExpert Advisor, an expert advisory system designed to help homeowners select plants for landscaping, and James Ormes discussed the Goddard Space Flight Center Library’s project to combine expert systems with database access in what he called “one-stop shopping for end users.”

