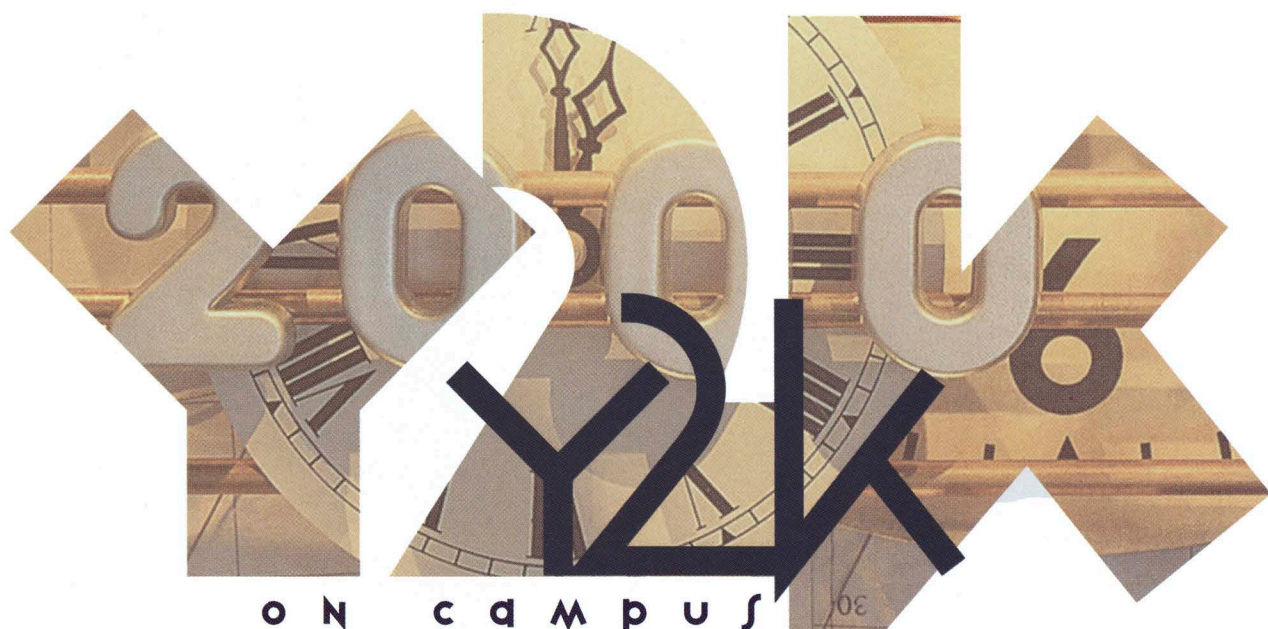


BY GARY PALLASSINO



With forethought and plain old good timing, Syracuse University is ready to rumble with the millennium bug

**Y2K**—two letters and a number that have certainly caught the world's attention. Reactions to the impending year 2000 computer bug range from steadfast faith that all problems will be fixed, to dire predictions that, come January 1, society as we know it will end in the ultimate computer crash.

The truth lies somewhere in between, says Ben Ware, Syracuse University's vice president for research and computing. The federal government claims it's prepared, and no critical industry is expected to fail, at least in the United States, he says. "I see it as a spread-out nuisance. It's not a catastrophe that's going to happen in one day and bring us to our knees. We've already seen Y2K problems in systems that do time-based calculations into the future, and we'll continue to see problems for a couple of years."

At SU, however, a combination of foresight and fortuity has minimized potential problems. Planning began in 1993, when the University took a hard look at modernizing its computing infrastructure. "The Y2K problem was, of course, a big issue," Ware says, "because we knew we had about 2 million lines of code (instructions that make a computer run) on our mainframe that were not Y2K compliant. At that point we had to decide what kinds of investments we would make to address that problem." After extensive consultation with computer experts, other universities, Chancellor Kenneth A. Shaw and his cabinet, and SU deans, Ware's office settled on

replacing most of the mainframe systems with modern client-server systems. Mainframes are large computers with enough processing power to handle hundreds of users simultaneously; client-server networks feature desktop PCs—the clients—doing most of the processing themselves, accessing servers for files and other resources. The latter technology allows faster, more versatile access to information. And the new programs are Y2K compliant.

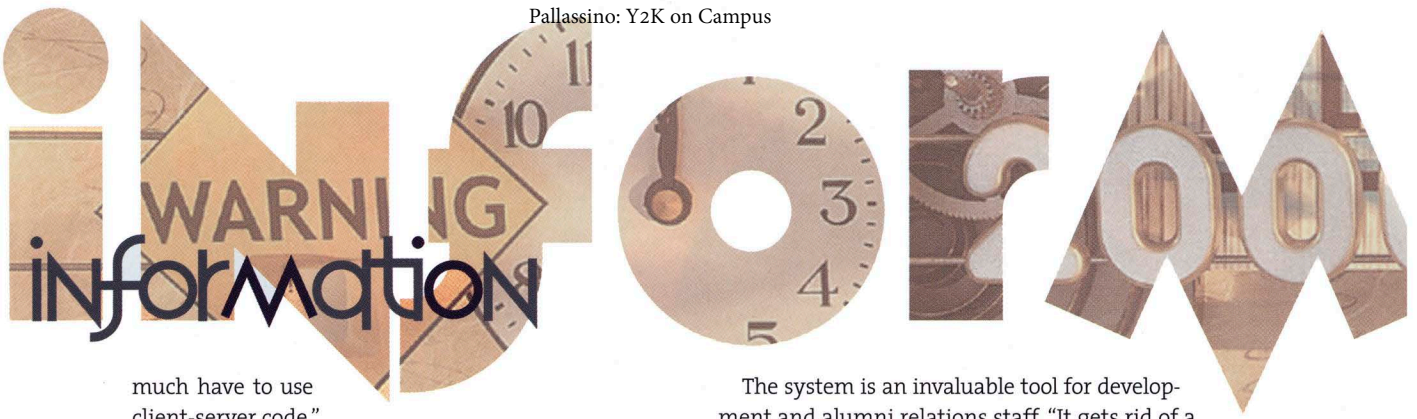
The Y2K quandary lies within most computer systems' inability to correctly interpret the year 2000. In the days when computers relied on punch cards rather than hard disks for data storage, programmers saved valuable space by truncating years to their last two digits. The practice continued in the seventies and eighties, when disk space was at a premium, and even into the nineties, when data storage was cheap and plentiful. This method works fine, of course, until the digits turn over to 00, which the computer interprets as the year 1900. The cascading effects of failed date-related operations cause anything from such minor annoyances as files that won't open to complete system shutdowns. Only in recent years have computer systems and software become Y2K compliant. Even Macintosh systems, which have always used four-digit years, may not escape the bug in a number of compatible programs.

"Although the Y2K problem is a serious threat worldwide, we saw it as an opportunity," Ware says. "The old model of writing your own software on a mainframe is not a good one. These programs get bigger and bigger every year. And after 20 or 30 years, the systems become outmoded, there's no good documentation on them, and their flexibility deteriorates. Eventually they just break and you have to replace them." These days, no one writes new systems in mainframe computer languages, he says. "If you're going to replace mainframe code, you pretty









much have to use client-server code."

Ware says it would have been too costly to make the existing mainframe code Y2K compliant, and would not have added any new functions. Apart from added features, he says, the new client-server systems are regularly updated by the companies that create them. "Upgrades are designed to keep up with modern operating systems and hardware, so this obsolescence problem doesn't take place," he says.

Three of the University's most important systems have been replaced. "The first was the development system," Ware says. "Now our development staff has much better access to alumni and donor information; they can track things better, and input is much easier. It's a clear improvement over the previous system, which we wrote ourselves." The second new system made listings of all the SU library's holdings available on the World Wide Web, Ware says, "so now you can access our catalog from anywhere in the world." Finally, a new student records system put in place last spring allowed for the University's first web-based student registration. "The technology's still pretty new and there are always glitches," Ware says. "But we did more registrations in a given day than we could have under the old model. And it was much easier for students."

### delivering development information

"We went through the bleeding edge," says Linda Bennett G'80, executive director of Development Information Services, of implementing the University's first major client-server system. Made by BSR of Waltham, Massachusetts, the system became active in 1997. It was still under development when SU bought it and became the third client to bring it online. Now the BSR system is used by approximately 80 colleges and universities, including UCLA, Brown, and Dartmouth. "They call us pioneers when we go to conferences," Bennett says.

The system's database includes all SU alumni and such benefactors as parents, friends, organizations, corporations, and educational foundations. "BSR has the same information the old mainframe system had, and a lot more," Bennett says. "We store gift and academic information, colleges from which degrees are earned, student affiliations, awards, and honors. We can track that information much more easily."

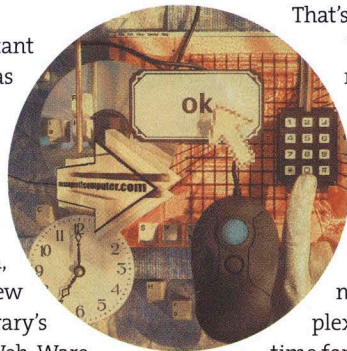
The system is an invaluable tool for development and alumni relations staff. "It gets rid of a lot of paper and old data," Bennett says. "We're sharing more information than ever before." Another benefit is 24-hour operation; the old system shut down at about 6 p.m. and wasn't available on weekends. "It's really much more user-based," she says. "We decide how we want to define and store data, and we write our own retrievals and reports in-house. That's flexibility we've never had."

Two new components will be implemented within the next year: BSR's advanced client-server web access, which allows reports to be generated online, and the company's events management subsystem, which can be used for events like Reunion. Even more capabilities await future upgrades. "Right now the system is very large and complex," Bennett says. "It's going to take some time for us to exploit the full potential. There's so much capability there—the challenge is to not get caught up in all the features and try to use every single field or data element."

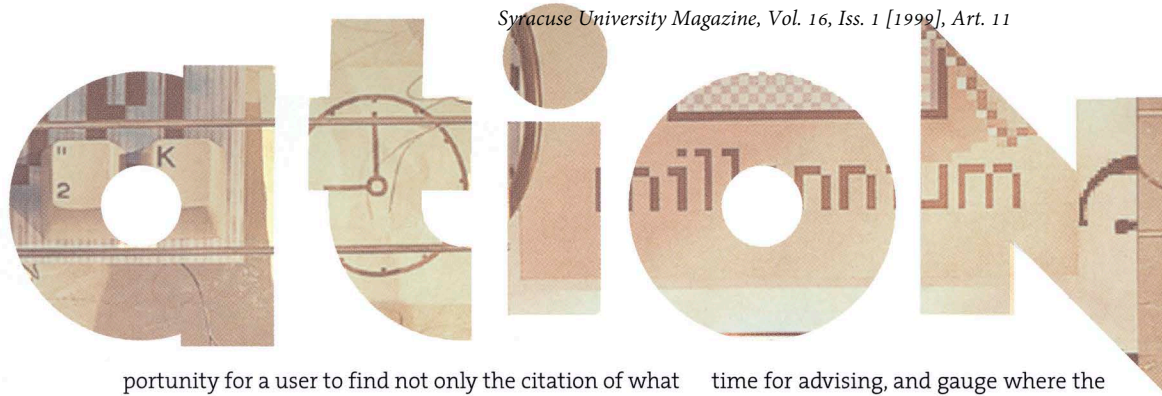
### A New Way to check out the Library

Next online was the library's client-server system. Made by Endeavor Information Systems of Des Plaines, Illinois, and sold under the name Voyager, the system is called Summit at SU, after the mainframe system it replaced. Both the old and new systems offer a full suite of library applications, allowing staff to order, catalog, and circulate material, says Randall Ericson, associate University librarian for technical and automated services. "The new system is Windows- and web-based, so there's a graphical presentation of information in Summit," he says. "It allows us to tailor the system more to our own specifications."

The system, which can be accessed at [libwww.syr.edu/summit.htm](http://libwww.syr.edu/summit.htm), features a much more powerful searching capability than the old Summit. "It has a relevancy-based search engine," Ericson says. "When you do a keyword search, it will weigh the results and, hopefully, the items most relevant to your query will be returned first." Another improvement is the direct link from catalog records to electronic resources, he says. "As we move into providing more and more digital information, this kind of linkage becomes more important. It provides the op-







portunity for a user to find not only the citation of what the library has, but also the actual text or data itself, by clicking on the linked resource."

One of the most significant changes, Ericson says, is the dramatic increase in the number of available databases. Under the old system, the library offered access to about 25 commercial databases, such as Search Bank and the Reader's Guide to Periodical Literature. The new Summit links to more than 400. "It has opened up much wider access to information through a single mechanism," he says.

## revising registration

**Y**2K was an important consideration in replacing the University's 23-year-old student records system, but by no means the only one, says University Registrar Peter DeBlois. The system was a patchwork of files and databases created over the years to serve particular needs. The new student records system is one component of a larger system, called PeopleSoft, that also encompasses human resources and payroll, the bursar's office, and financial aid. Each component is linked through a shared database. For example, the registrar's office would not need to reenter such basic information as name and address for an SU employee taking classes.

The most visible part of the student records system, and the first to come online, is student registration. "Prior to 1983 we had what was called arena-style registration," DeBlois says. "We would put the entire main campus student body—about 15,000—through Archbold Gym over an intensive and rather formidable two-day period, just before a semester began. It was a challenge for students to try to build a full-time schedule." With computer punch cards in hand, students would brave long lines to meet with representatives from departments of the various schools and colleges. DeBlois says the Steele Hall registration center, established in 1983, dramatically changed the experience. "A student would come to the center at a designated time and work one-on-one with a registrar's representative to build the schedule from a set of approved course choices. That had a number of advantages apart from the more personalized experience for the student. It gave students and academic departments some breathing room to plan for course offerings, have sufficient

time for advising, and gauge where the demand was."

The introduction of the PeopleSoft system dramatically changed the process again, with telephone and web-based registration replacing the Steele Hall center. "Even though for the past 15 years it was a more personalized experience, there were still times when lines went out the back of Steele Hall," DeBlois says. "The reality of registration has always been that there will be closed courses and students will need alternatives, or to get permission and waivers from the departments. Those are handled more efficiently now via the web and telephone." The old center handled 20 students at a time; now, more than 100 web users and up to 30 telephone registrants can simultaneously access the new system. And while the center was only open during business hours, the new system is available from 7 a.m. to midnight during the week, and from 10 a.m. to midnight on weekends.

Despite glitches and some system crashes, DeBlois says, the transition went remarkably well. Some problems—such as courses closing before a student can register—persist, but these are independent of the mode of registration. "For all the bells and whistles of this client-server technology," he says, "registration ultimately comes down to good advice and good information on both the student's and faculty advisor's parts. And that was true even back when we had the old system of arena registration in Archbold."

## getting out the glitches

**W**are says a small number of systems remain on the University's mainframe computer. In some cases, it was more cost-effective to rewrite the programs, making them Y2K compliant. Others are awaiting manufacturers' fixes, and will be extensively tested on a mainframe computer set up for that purpose in Massachusetts.

Ware and his staff will be in the office January 1. "I'll be looking on the Internet to see what's happening all over the world," he says. "And my staff will be there running systems to see where the problems are. It's unrealistic to think that any large organization will see no Y2K problems. We don't think they'll be serious, but there will be a period of time when they're a noticeable nuisance. Once we've seen and fixed them, the problems will go away."

