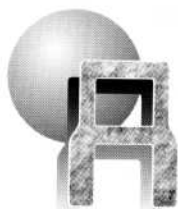


## A group of campus “hackers,” “techies” and “cyberonauts” are wanderers in the visionary world of Virtual Reality.

by Ben Fenwick



Although he received his M.B.A. almost five years ago, a Sooner alumnus—let’s call him James—decides the time has come to attend that seminar at OU he has been considering. Doing so will be a bit of a stretch, however, since he now works for a firm in Tokyo.

Nevertheless, James and approximately 20 others make it to the class on time, attending lectures three nights a week. During this particular lecture, the professor makes a point, then asks for questions. James raises his hand, and the professor points to him. He asks his question, and the professor answers. Since there is no further discussion, the professor dismisses the class for the evening.

James touches a button on his console. The professor, the other students and the classroom at the University fade into nothingness. He pulls off his helmet. Thanks to the magic of Virtual Reality (VR), James is still in his Tokyo apartment, beginning the day with a two-hour night class under his belt. He is closer to the professional goals he has set for himself.

Mere pipe-dreaming? No, it’s the future, if a group of computer “hackers,” “techies” and “cyberonauts” on the OU campus have their way. From a loosely organized group of student computer users, called the Virtual Reality Access Community, this amazing new technology is making its way into the campus world, and OU could be one of the first to use it.

“OU is one of the few universities teaching Virtual Reality,” says assistant professor Jim McClusky. “You could probably count the ones that do on both hands.”

McClusky teaches an intersession VR course at the H. H. Herbert School

of Journalism and Mass Communication. Students are hungry for the course, and his classroom usually is packed with those interested in the new technology.

“The primary goal of intersession classes is to teach things one normally wouldn’t be able to find in a common university setting. Virtual Reality is perfect. It’s the cutting edge,” McClusky says.

VR is a marriage (some might say with Frankenstein’s bride) of the exploding world of computer technology, media and the 50-plus-year-old technology of flight simulation. By donning goggles made of two small TV screens and attaching them to a computer, a participant can look into another world that exists only in the electrons streaming through the computer. When the individual turns his or her head, the scene changes according to the movement sensed by the computer. By adding gloves or other devices attached to the same computer, that person can interact with the artificial world by touching or moving objects, or with other sorts of motion, even flying.

That techno-realm existing somewhere in the computer’s chips is called “Cyberspace.” The term, invented by avant-garde science fiction writer William Gibson, comes from the term Cybernetics, which refers to a blending of human and machine.

Cyberspace is used for VR but also refers to more common forms of computer telecommunications. Going into Cyberspace can be as simple as calling up another computer, called a “bulletin board,” and interacting with other users by typing messages back and forth. One could call up such a computer right

next door or thousands of miles away.

While the example at the beginning of this article demonstrates how VR and Cyberspace could be used in an educational setting (in this case, allowing a person on the other side of the world to attend a class in Oklahoma), that is only one possible application. The military already uses VR to train pilots by putting them in a simulated cockpit to “fly” through a mock battle assignment. Desert Storm pilots are said to have benefitted from this kind of training. Other theoretical uses include:

- Architecture.* Imagine being able to put on goggles and tour your house before it is built. You don’t like the way the window is facing? Tell the architect standing next to you. He’ll move it anywhere you want. This technology already is being used to design buildings for handicap accessibility.

- Surgery.* Medical students could practice a heart operation on a “virtual patient” with no danger of loss of life. The patient is just a computer program. And they can keep practicing until they get it right.

- Hazardous waste handling.* No need to worry about possible contamination to the handler. He puts on his goggles and “sees” through the eyes of the robot, who is really doing the dirty work. With a pair of gloves hooked up to the computer, he safely controls the movements of the robot from many miles away.

Other far-out concepts include possibilities such as attending concerts, via a VR hookup, and never leaving the living room. Researchers even have donned gloves and goggles and viewed the world as a lobster—complete with computer-generated claws.

Much less whimsical, much darker

# CYBER SOONERS

From the Miramax film, *Beyond the Mind's Eye*



Buck Rogers in the 22nd Century? Well, maybe, but with the proper equipment, this someday could be Sooner cybernauts flying through a futuristic space tunnel that exists only in their computers. Campus hackers confess that the "reality" in Virtual Reality still has a long way to go, but their enthusiasm for VR is already online.

scenarios are being discussed. A recent movie, *Lawnmower Man*, addressed the possibility of a computer world becoming so real that one person could kill others while inhabiting it. Another, perhaps more likely chance exists that a person could come to like the worlds of Cyberspace so much that he or she would not want to come back, not even to eat, drink or sleep. That

person would become a kind of "virtual" couch potato. A name already exists for such a person, coined 20 years ago in science-fiction stories: wirehead.

McClusky does not dismiss these likelihoods, but he puts them in an optimistic perspective.

"A lot of people like to spread doom and gloom," he says. "There are people

now who lie around and watch TV to the point of ill health. The ones who do will lie around and watch VR. There also are going to be people who use (VR) constructively."

Although she is far from being a wirehead, OU graduate assistant Gail Sullivan is one cybernaut who rarely spends much time away from a computer. She is in charge of the Virtual



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Courtesy: Miramar

To be able to don Virtual Reality equipment, walk into this futuristic landscape from the Miramar film, "Beyond the Mind's Eye," and have instant interaction with the viewer's movements would require much more computer power than currently is available to most would-be cybernauts. But it's only a matter of time. Sooner techies say, until VR will be a part of everyday life, just like the telephone or the television.

Reality Access Community, a group of students, staff, faculty and other enthusiasts of this new medium. The group has a campus office at 221 Ellison Hall.

"We exchange information about VR, compile files and talk on networks," Sullivan explains. "The computer in the office is chock-full of information. We collect new articles and write to vendors to get all their specifications. Anyone writing a paper or wanting to have more information about VR can come to us. That's what we're here for—to let people know."

Staying current is quite a feat in itself, Sullivan says. Since VR began making headlines, the number of new articles on the subject has increased at about the same rate as the technology.

"It's changing every week," Sullivan

says. "There are always new activities going on. When I first started collecting articles, there were maybe three a month. Now I've given up trying to have every single article in print. I just try to find the really special ones. VR's gotten so mainstream that everyone is getting a hold of the idea."

A recent *Time* magazine cover article devoted itself to Cyberspace. A *Business Week* cover article also reviewed the medium, and even a recent issue of the *American Legion Magazine* shows that the concept long ago left the confines of *OMNI Magazine* or *Scientific American*. Now, most of the articles Sullivan sees are so new that they have not even seen print yet. Sullivan looks them up on Internet, a worldwide computer network.

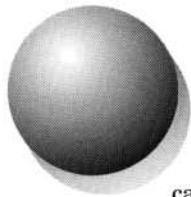
"It's my favorite activity on the com-

puter," Sullivan admits. "It's a network that includes more than 100 countries and more than a million computers around the world. I find that most advances I read about now in print I've read about on the Internet long before."

She reads anything from agricultural reports, music lyrics, TV show transcripts and the latest biomedical research to reports on congressional hearings. A person can even write a letter to the president, via his Internet address, PRESIDENT@WHITE HOUSE. In addition, users have access to free computer programs called shareware, which can be anything from a collection of favorite recipes to word processing programs or video games.

According to some estimates, Internet use is growing at a rate of

**VR's gotten so mainstream that everyone is getting into the act. A recent *Time* magazine cover article was devoted to Cyberspace; then *Business Week* ran a cover article . . . even the *American Legion Magazine*.**



about 600 percent per month—a “virtual” explosion.

“It’s vast. You can search libraries all over the world. You can look at campus databases all over the world, everything from syllabi to entrance requirements. Most major universities have everything online. You also can find out what the weather will be like where you’re going. I just can’t say enough about it.”

Saying as much as possible about Internet and other cyber-interests is one of the purposes of the VR group. Soon the group plans to teach Internet lessons, Sullivan says, for a small fee.

With that money, she and the others plan to purchase a set of goggles and a power glove so they truly can experience Cyberspace.

The higher-end hardware costs as much as half a million dollars. Smaller-end machines can give one a taste of VR and allow for some tinkering at the Nintendo-level for about \$1,500.

“We’re really trying to get glasses—some are as cheap as \$200-\$300,” Sullivan says. “It’s our first goal because we don’t feel like we’re much of a VR group without glasses.”

Which leads to one of the frustrations, Sullivan admits. The technology for good VR just isn’t up to speed yet.

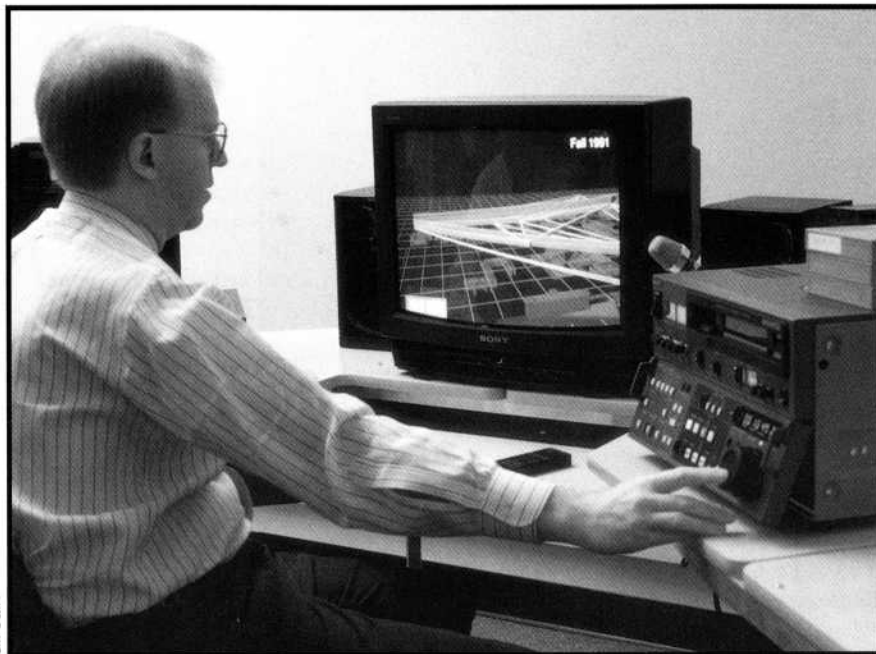
“I’m still concerned about whether or not the ‘reality’ part of the claim in Virtual Reality will ever be realized,” Sullivan says. “Judging from the units I’ve used, it’s anything but real. All you see are choppy, blocky cartoons that aren’t even as good as real cartoons. We have many problems to work out with the technology.”

That is also the view of Joel Dietrich at OU’s College of Architecture, where students and faculty use computers to design and build structures. The college possesses a Silicon Graphics Crimson computer, the kind used in Hollywood to make animation approaching the quality of the *Jurassic Park*/*Roger Rabbit* variety.

Dietrich and his students recently produced a computer video of OU’s Norman campus. The campus is laid out exactly as it would appear from the air. The Energy Center, Dale Hall and other familiar landmarks flash across the TV screen as the angle of view shifts, as if the viewer were sweeping across the campus sky in a fast-moving helicopter. Viewed through the kind of goggles Sullivan envisions, the video probably would produce feelings of motion, even vertigo, as if one actually *were* in that helicopter.

Impressive and breathtaking, this is still not VR. For one thing, it is only a video. The viewer cannot stop it and say, “I’d like to see what’s in that building.” The video is not interactive. Each picture frame of the program took about 10 minutes to create on a computer, Dietrich says. The entire program took months to produce.

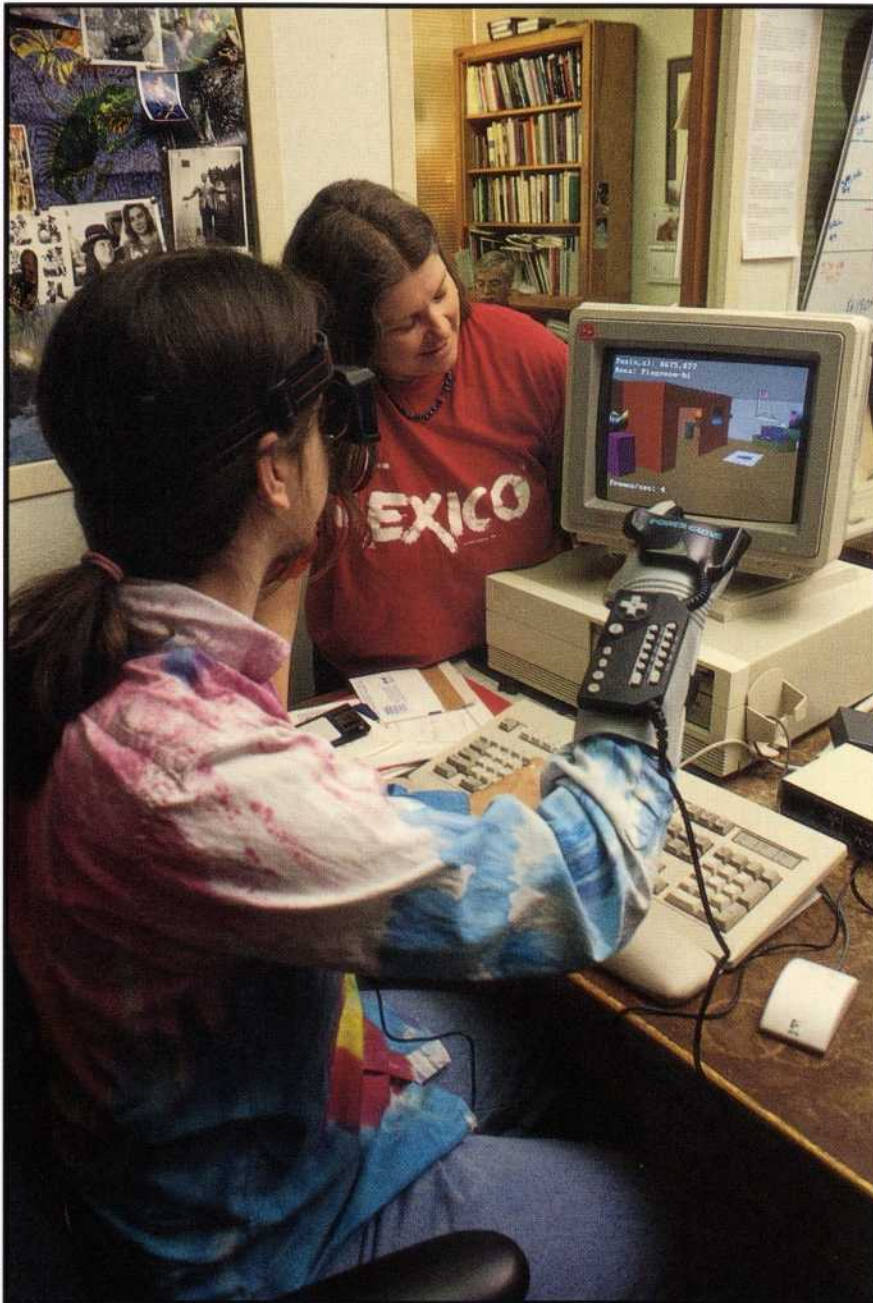
“That’s why most of the VR constructs you see are not multiple buildings like this, with some degree of detail, but are four walls and a desk,” he explains. “And you ‘fly’ around the



Gil Jain

OU architect Joel Dietrich has produced a computer video of the campus that allows landmarks to be viewed as if from a fast-moving helicopter. The result is impressive but still just a video, not interactive VR enabling the viewer to stop and see what’s inside a building.





Gil Jain

A graduate assistant in English, Gail Sullivan, right, operates the Virtual Reality Access Community, a group of campus enthusiasts who use computer networks to stay current in this rapidly developing field through articles published in scientific journals and the popular press.

room. That's your experience. There's not a lot of detail in the room, such as moldings or pictures on the wall."

To produce instant interaction with the viewer's movements on the scale of Dietrich's video would take much more computer power than currently is available to most would-be cybernauts, Dietrich says. He describes his school's

own formidable \$150,000 machine as a "pretty powerful computer" but one that would require an incredible jump in horsepower to accomplish such a feat.

Still, Dietrich admits it is only a matter of time until the kinds of virtual processes only discussed now are performed regularly.



think we're understanding the concepts and the ideas," he says. "I think VR shows a lot of promise. Several years down the road, it will

be something everybody's doing."

Sullivan is more specific.

"I don't think it's very far away . . . five years probably," she estimates. "I'd guess most people will have some kind of access in their homes if they want it. They'll be able to rent equipment from someone like the phone company and pay for the time."

"The technology is holding it back, but it's developing rapidly," agrees McClusky. "When the technology comes, it will be different from what we envision now. We will use VR in everyday life, like the telephone and television. The real question is, who will capitalize on it?"

Sullivan hopes it will be the everyday, average human being. In the future, she wants anyone to be able to use the power of Cyberspace and VR to access the information to control his or her own destiny.

"We are at a critical point right now," she says. "The people with the thoughts, the money and the planning can either lock information away and make it hard to get or they can make it easy. It's my interest to make information more accessible to people."

And what better place to start than the university campus where the sharing of information shapes the product of tomorrow. 