Computers infiltrate surgery, art studio and University study

Surgeons look at a three-dimensional model, trying to determine how they should procede with surgery to reconstruct the patient's face.

An artist stares at the computer terminal before quickly punching the buttons to produce a new work of art.

The University student, after a one-term course, programs a computer to take a plot of land, put buildings on it and rotate it so all sides of the project can be seen.

Computer graphics have been applied to these fields to enhance their efficiency and creativity.

"We don't want to be computer scientists," says Gene Bressler, a landscape architecture professor who uses computer graphics in land use planning. "We want to use computer technology in our fields but we need computer scientists to help us with our applications."
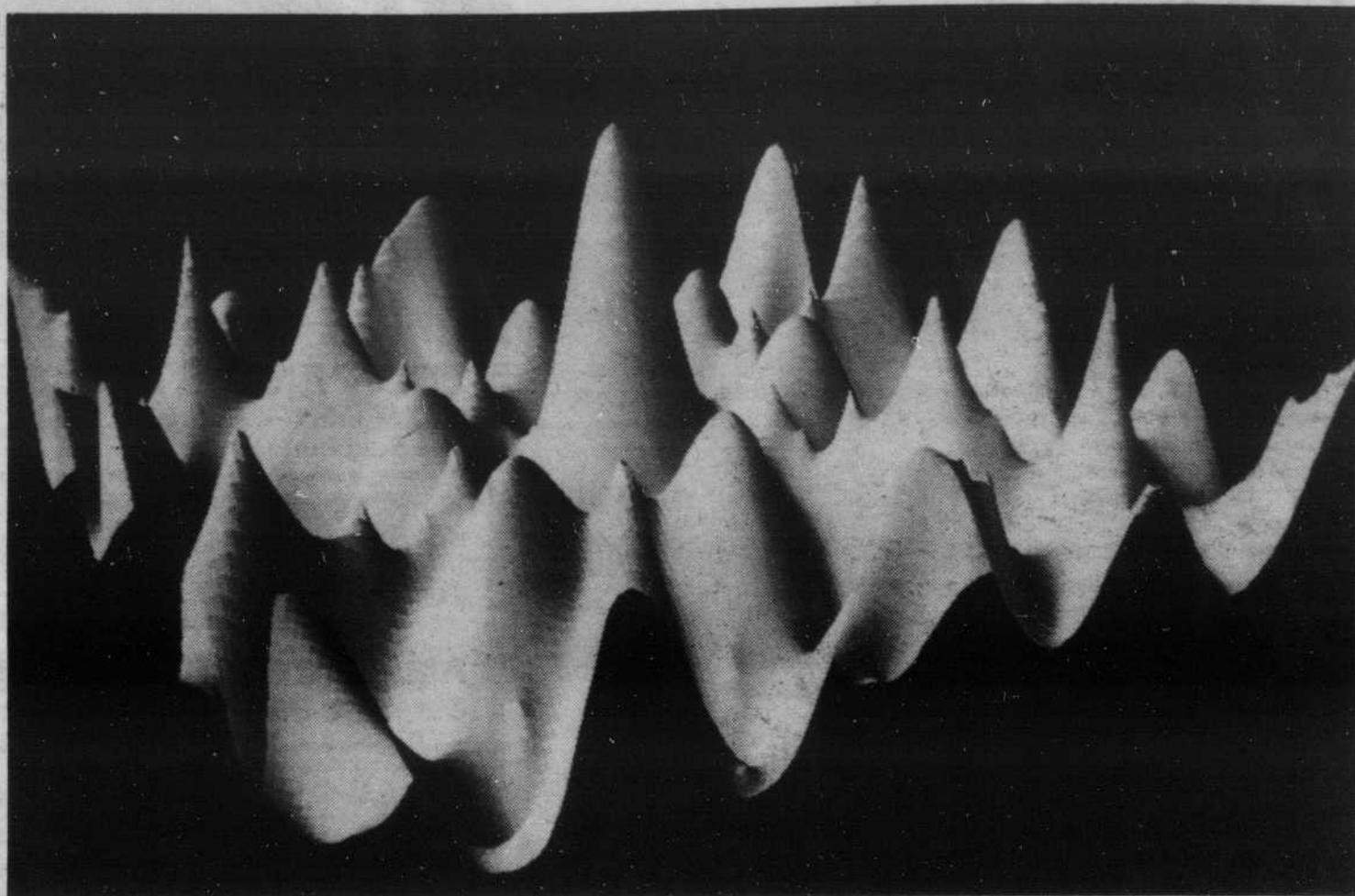
The uses for computer graphics are expanding every year as more people in different fields become aware of the usefulness of computer technology. Five to 10 years ago, only hard core "basic" scientists used computers. Now the number of fields has expanded, adding a new dimension to some professors' work.

Bressler has been teaching computer graphics for the 10 years he has been at the University, spurred by his initial interest in them while a graduate student at Harvard University.

While he is teaching, Bressler constantly looks for guest lecturers to present new perspectives to his students. One day, he and colleague Ken O'Connell, a fine arts professor who works with computer graphics, began discussing how their needs overlapped.

Out of that discussion, the computer graphics conference was born.

At first, they planned a small workshop or series of seminars, but it soon ballooned into a full-blown conference in the Eugene Conference Center, attracting about 900 people.

That was last year — now O'Connell and Bressler are gearing up for the second annual Computer Graphics Conference set for Oct. 24-25 at the Eugene Conference Center and Hult Center for the Performing Arts.

"Applications on the leading edge" will feature 10 speakers about aspects of computer graphics ranging from their applications in surgery to animation to athletic shoe design to land use planning.

Cost for students is $30, faculty and staff pay $50 and others pay $60 if they meet the "early bird" deadline of Oct. 5. Prices jump $10 after Oct. 5. Rates are also available for just Monday or just Tuesday.

The steering committee of interested faculty, staff and students began planning the event in March. They conducted a nationwide search for the speakers and lined up not-for-sale exhibits and commerical vendors.

The conference has a budget of about $40,000, but Bressler hopes it will gross about $50,000 to $60,000 with the extra funds to be used for (what else?) next year's conference.
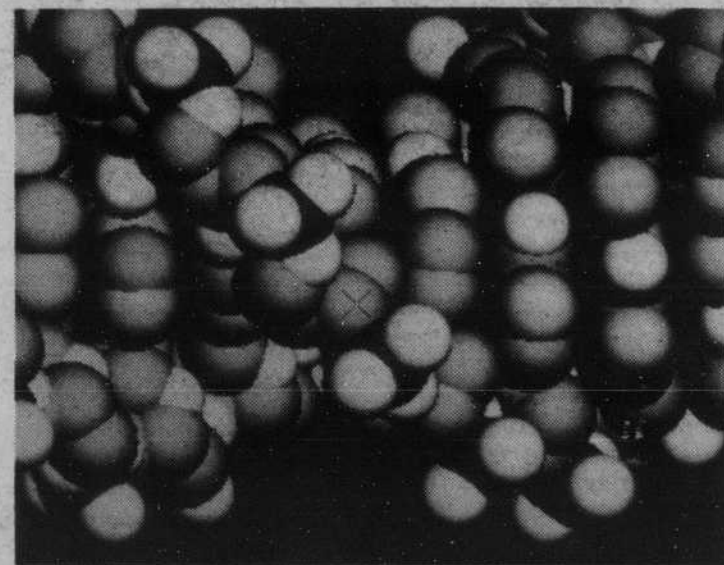
To people in the field, the University's involvement in the conference solidifies its position in the field.

"We're being looked at because of this conference," says Bressler, "and people seem to be impressed."

Bressler hopes the State Board of Higher Education will be impressed enough to approve a new institute of computer graphics that he and O'Connell will push for after the conference is over.

"We want to build up our credibility before we go to the board," says Bressler. "The state board is looking to cut back and we want to show the high demand for this program."

Besides the institute, Bressler also plans to set up an academic minor in computer graphics. "It will open up tremendous job potential.

"The potential for computer graphics at the University of Oregon is just tremendous," says Bressler. "We have an established tradition of computer graphics use and development.

"One of our dreams — our hopes — is to become a leader in computer graphics application."
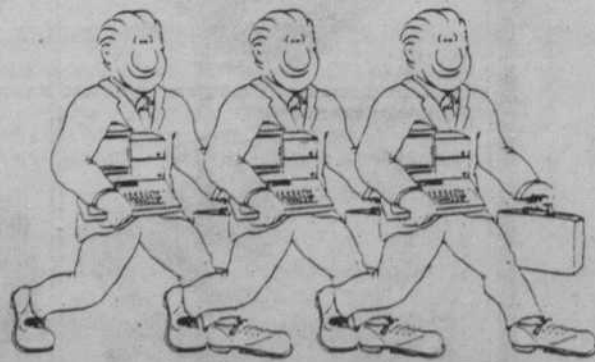
The conference is a good start.

Story by Sandy Johnstone
Photos courtesy of Computer Graphics Conference

A visual display of sine waves can help scientists understand a complex concept.

Chemists can determine molecular structure with computer graphics.
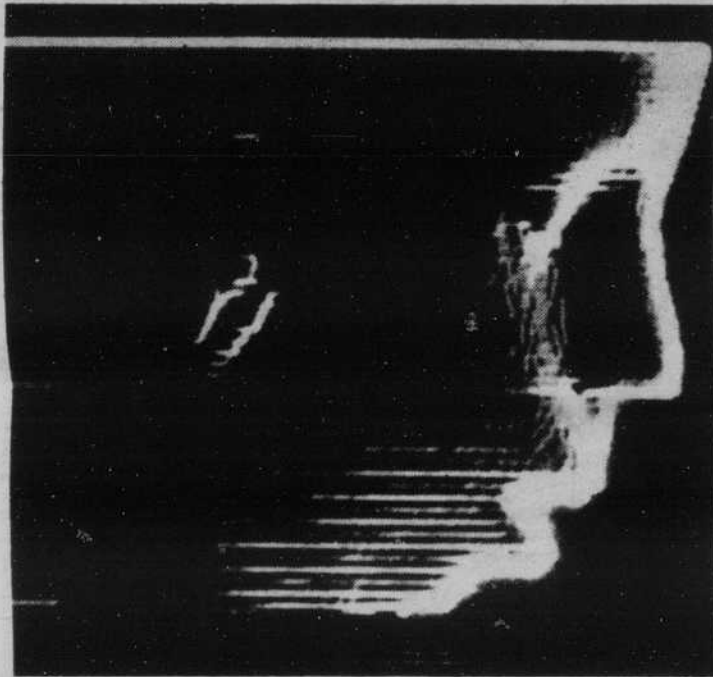
Plastic surgeons can use a computer to reconstruct an accident victim's face.