Watch the
hands and face

Television entertainer Jay Leno might not be presenting college lectures, but he is helping to make such lectures better.

James Davis, professor of computer science and engineering at Ohio State, is using recordings of Leno's comedy routines, among others, to test software that sharpens the image of a speaker's hands and face for the potential benefit of long-distance learning on the Internet.

"Our voice, gestures, and facial expressions are all intertwined," Davis said. "If I'm watching a lecture and I'm trying to learn something, I need to be able to see the speaker's face and hands."

Currently, low-resolution video makes fine details such as a speaker's face and hands appear fuzzy, but high-resolution video takes too long to download. Davis and his students created software that sharpens the areas of the speaker's face and hands while slightly lowering the resolution of the rest of the image so bandwidth isn't increased.

Davis tested his software with five volunteers who viewed short video sequences, one of which was taken from a Leno monologue on the *Tonight Show*. The volunteers watched an unenhanced version, which was typical of what most people see when they watch video over the Internet, and an enhanced version, which featured clearer visuals of Leno's face and hands and a slightly lower-quality background. All five volunteers chose the enhanced version as their favorite.

Although the software has not been used in any actual lectures, Davis said that it would improve on what is currently available and possibly spark more interest in long-distance learning.

In the future, Davis wants to upgrade his software so it can track the movements of multiple speakers at once and enhance selected background objects, such as whiteboards, when they are used in a lecture. ●