Double Vision

One of the most difficult jobs in many laboratories is spending the day peering into a binocular microscope. After the first few hours, the back goes. By the end of the day, the migraines start. "The elbow that I lean on hurts all the time, and my eyelids have these little twitches that won't go away," says one frazzled biologist.

In recent years, scientists have taken to using video cameras on their monocular microscopes to make viewing easier. But it's not so easy to do with binocular scopes, because you need to somehow combine the two video inputs into a single image.

The Light Advanced Microscope Project, Inc. (LAMP) has the answer: a video imaging system for stereo binocular microscopes based on LCD shutter eyeglasses. LAMP'S system Includes two proprietary video cameras, a 486 PC, two video frame-grabber boards, a Super VGA video card, a 17-inch non-interlaced RGB monitor, two pairs of the eyeglasses, and a proprietary external black box.

The eyeglasses are equipped with a set of LCD

No. This isn't a 3-D movie.

electronic shutters that open and close in sync with the monitor's 114Hz refresh rate, so that each eye gets 57 full-color frames every second. Thus, a scientist wearing the glasses who looks at the screen sees exactly what she would see if she were to look into the microscope itself - without the accompanying back strain. LAMP hopes to move to wireless, high-contrast, infrared-controlled glasses before the end of the year.

Besides displaying three-dimensional stereo images, LAMP'S microscope visualization system can also store hundreds of pictures, send them down a telephone line, or print them on a color printer. The imaging system comes complete with an image data-base management system that includes necessities like the JPEG compression standard and support for e-mailing images anywhere in the world.

"Sounds super," says the back-achy biologist. "I bet any lab with a Howard Hughes grant could get four or five of them." - *Simson L. Garfinkel*