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PREVIEW

An ASCRS first ... the 3-D course

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by Maxine Lipner Senior EyeWorld Contributing Editor

New system allows practitioners to view cases in 3-D

Practitioners who think that they have seen it all at conferences are in for a surprise at the 2008 ASCRS•ASOA Symposium to be held in Chicago. This year for the first time ever at an ophthalmology conference, a course will be viewed in 3-D, according to Robert J. Weinstock, M.D., associate professor, University of South Florida, St. Petersburg. The course, scheduled for April 8, is titled "Advanced Techniques in Refractive Cataract Surgery Presented in TrueVision 3-D High Definition." It will bring practitioners up-to-speed on the latest techniques in refractive surgery and will offer cases presented in a unique 3-D, high-definition projection format.



With the 3-D TrueVision system, doctors operate heads up

Groundbreaking 3-D course

This new 3-D format is made possible as a result of the new TrueVision Microsurgery Teaching System (TrueVision Systems, Inc., Santa Barbara, Calif.), an innovative 3-D vision attachment for microscopes. This new attachment to the microscope uses high-definition cameras in place of each of the usual eye pieces and hooks onto a beam splitter on the back side of the microscope, according to Dr. Weinstock, who will be leading the course. "The information is sent to a computer that processes it and then projects it onto a giant plasma screen," Dr. Weinstock said. "So instead of looking into the microscope, now doctors can look up at this screen and operate heads up in 3-D, using 3-D glasses."



Images from the TrueVision system can be viewed in 3-D by conference attendees
Source: Robert J. Weinstock, M.D.

The information can be viewed live and also recorded to be seen later at conferences and the like. "For the first time, we can actually record in 3-D and show this to people with a special projector," Dr. Weinstock said. "Instead of us using video presentations at ASCRS on just a regular TV, we're going to be showing the cases in 3-D format, with the participants able to wear 3-D glasses."

Dr. Weinstock sees this as a great way to enhance learning for attendees at this event. "Hopefully they're going to be able to get much more value out of the surgical technique by being able to watch it in 3-D and see where the instruments are inside the eye," he said. "It will feel like

they're watching the surgery live."

Possible applications

There are a lot of other applications for the TrueVision system as well, he believes. "It's great for people with bad backs because they don't have to look down through the microscope anymore," Dr. Weinstock said. "It's also great for teaching programs." Instead of just two people being able to view the microscope, there can be a whole room full of residents. "Now 10 people can be in the room looking in on the surgery and learning." Dr. Weinstock, who was the first surgeon in the world to perform cataract surgery with the system, has performed more than 500 cases using TrueVision. In addition to cataract surgery, the system has also been used for corneal procedures and things such as pterygium surface disease. "There has also been one retina case performed with the 3-D system," he said.

He finds the system to be an asset in the operating room. "What I have noticed is that the ergo dynamics and the efficiency of the procedure is improved because the scrub tech is able to follow the case more naturally," Dr. Weinstock said. "He is able to hand me instruments and anticipate what I'm going to need because he's looking at exactly what I'm looking at." This translates into a smoother procedure with fewer distractions, he finds. "It allows me to maintain my focus on the eye more than I usually can," Dr. Weinstock said. "I also find that the depth of the field and the magnification of the system are greater than is obtainable through the ocular microscopes."

The system also has infrared ability that may prove protective to the eye. "We may be able to lower the microscope light down to reduce toxicity to the eye but yet still be able to do the surgery with the infrared light," he said.

One potential downside to the system is its resolution. "So far it is not as high as through the microscope (alone)," Dr. Weinstock said. "It's currently about 80 to 90% of the resolution." Going forward, however, he does not see this as an issue. "The company is working on an improved capture station which will increase the resolution as they keep making new advances in the technology and improving the system," he said.

In the future, it may also be possible to use the system in new ways to aid surgery. "They're working on developing some software to make it possible to draw on the screen where you want your incisions to be, and circle and outline where you want your capsulorrhexis to be," Dr. Weinstock said. "There's a lot of graphical analysis and other software that the company is developing to aid in cataract surgery—things that will never be available through a (traditional) optical system."

Editors' note: *Dr. Weinstock is a consultant for the company.*

Contact information

Weinstock: 727-585-6644, rjweinstock@yahoo.com

