

Innovation in Vegas

Vision Expo West in Las Vegas gave **Ikechi Ekezie** a first look at some of the latest devices and inventions targeted at optometric practice

Vision Expo West, the second largest optometry meeting in the Americas, was held this year at the Sands Expo and Convention Centre in the Venetian Hotel Las Vegas.

Despite having lived in the US for a while, this was my first Vision Expo and I was keen to see how and if it differed from other optometry conventions.

One major difference between VEW and other optometry conventions is its sheer size: 480 exhibitors occupied an exhibition area of 271,000 square feet. The convention was attended by 12,359 eye care professionals from all over the US and across the world and there were 388 hours of continuing education (although a rough estimate judging from course content would suggest that one third of the CE courses offered would meet the requirements to be awarded CET points in the UK).

The Sand's Convention Centre is easy enough to locate being set in the Venetian Hotel – one of the large elaborate hotels Las Vegas is famous for. However, locating the convention centre within the hotel is a different matter and involves a lot of walking on a journey that takes you past scores of shops, bars, cafes, past a multitude of large posters of major and minor celebrities performing in the city and through a least one large casino.

Subjective refraction

Having already acquired more than the required CET points needed to retain my registration with the General Optical Council in 2012, I attended the convention mainly with a view to making purchases and to evaluate any interesting optometric instruments that may not be available yet in the UK. One example of this was the Vmax PSF Subjective Refractor.

According to the inventor, Shui T Lai, the Vmax PSF refractor is the world's first wavefront-based subjective refraction system. It uses the eye's point



The Venetian Hotel, Las Vegas

spread function in the determination of the subjective refractive endpoint and is capable of refining the subjective refraction to an accuracy of 0.05D and the axis of astigmatism to less than 0.5 degrees. Having decided to offer myself as a guinea pig, I was surprised at how patient friendly the system is: the entire system is housed in a unit similar in appearance to a frequency doubling technology perimeter; the subjective refraction took about four minutes per eye, and at the end I was able to read the 20/13 line (better than 6/4) in each eye. The inventor recommends the use of the Enception lens system (as this is capable of manufacturing lenses to the degree of accuracy required by the refractor). For more information visit www.vmax.com.

Another interesting and quirky little invention launched at the convention was the Eyequick hand-held digital ophthalmoscope invented by Dr Marc

Ellman, an ophthalmologist from El Paso, Texas. The ophthalmoscope resembles a conventional hand-held ophthalmoscope in every respect but the eye piece is replaced by a digital screen approximately 4cm wide and 7cm long. It is capable of storing up to 220 images, all of which are saved on a small SD card. The device also handles quite differently from a conventional hand-held ophthalmoscope, in that there is obviously no need to get as close to the patient as usual, and dim lighting is an absolute necessity in order to gain sufficient pupillary constriction to view the fundus with any success. After a couple of tries I was able to view the retina with pretty good clarity, although it felt like I was using a cross between a digital slit lamp and a hand-held ophthalmoscope.

Dr Ellman expects his invention to obtain a CE mark and go on sale in the UK in January. The US retail

Conference report



Slit-lamp dock allows anterior images to be captured on an iPhone

price is set at \$6,000. It's hard to see where this would sit in a typical high street practice, given the penetration of more traditional slit-lamp digital ophthalmoscopy, but it could have some potential as a valuable undergraduate clinical teaching aid.

Electronic bifocal

Also drawing the crowds was the emPower electronic bifocal from PixelOptics. Trying these spectacles was an interesting experience. Essentially the emPower spectacles are built with a small touch-activated switch which is discreetly constructed into the right temple of the frames. When this switch is gently touched,



emPower electronic bifocal hooked up to its charger

an electric current flows to a liquid crystal layer incorporated within the lower portion of the lenses, which activates the reading addition. The net effect is that the spectacles, at a flick of the wrist, can instantly convert from single vision to a hard design varifocal, while a second click does the reverse.

The spectacles are sold with a rechargeable unit as they need to be recharged for a few hours every 2-3 days. The lenses are only available in a 1.67 index plastic material and are manufactured with a reading addition of between +1.25 and +2.25D.

Finally, the Terry Eye Institute in Fullerton, California showcased a

dock for the iPhone and iPod touch 4 that is capable of taking high quality photographs of the anterior segment. The dock is compatible with Haag Streit slit lamps and slit lamps that are Haag Streit copies. Its functionality is limited to the anterior chamber, but the system would probably be an effective and very inexpensive way of photographing this part of the eye. The dock retails at \$190 and considering the increasing popularity of the iPhone sounds like a very good investment.

No convention would be complete without the customary post meeting parties. Friday night saw about 10,000 attendees gather in the courtyard at the Flamingo Hotel for the largest of them all, courtesy of Marchon, where we were duly entertained by Haute Chile, a contemporary band from Southern California.

Next year, Vision Expo West is expected to be held between September 22 and 24 at the same venue: before then, Vision Expo East, the largest optical meeting in the US, will be held from March 22-25 in New York. ●

● **Ikechi Ekezie** is an optometrist who lives and works in Wisconsin, USA

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