

Proceedings of the 2nd International Congress of Wavefront Sensing and Aberration-free Refractive Correction

Introduction

Like in the movies, every great contribution or event in medicine and science has a sequel, which keeps the audience coming back, looking for more of what they experienced at the first showing. In a similar manner, the 2nd International Congress of Wavefront Sensing and Aberration-free Refractive Correction, which was held in Monterey, California on February 9-10, 2001, followed the audience-gripping 1st International Congress that preceded it by almost 1 year, with nearly the same kind of excitement and anticipation. As with the previous year, the meeting was co-sponsored by the Optical Society of America, with cooperating assistance from the International Society of Refractive Surgery and The American Academy of Optometry. Once again, our two largest corporate sponsors, Alcon Summit Autonomous Technologies and

Wavelight Technology Inc., participated together with Bausch & Lomb Inc. as Founders Level sponsors. Both VISX and Asclepion Meditec contributed at an Associate level sponsorship, with Tracey Technologies, Nidek Inc., and Schwind filling in as Assistant supporters. Overall, this led to a very well rounded congress, with the leading scientists, clinicians, and corporate personnel each contributing to a cross over of technology in wavefront sensing, physiologic optics, and refractive surgery.

As Feature Editors for the 2000 proceedings in the *Journal of Refractive Surgery*, we are again pleased to introduce the 2001 proceedings as a special sampling of selected papers from this "sequel" congress, covering historical, scientific, clinical, and commercial perspectives of wavefront sensing and aberration-free refractive correction.

In the historical perspective section, we present as key papers the highlights of the 2000 Congress, history and principles of Shack-Hartmann wavefront sensing, and wavefront data reporting and terminology.

In the scientific perspective section, key points from the fixed spot versus variable spot ablation debate are presented, with a theoretical

Ronald R. Krueger, MD, MSE, is Associate Editor, North America, for the Journal of Refractive Surgery, and is Medical Director of the Department of Refractive Surgery, Cole Eye Institute, Cleveland Clinic Foundation, Cleveland, Ohio.

Raymond A. Applegate, OD, PhD, is a member of the Editorial Board of the Journal of Refractive Surgery, and is a professor in the Department of Ophthalmology, University of Texas at San Antonio, Texas.



Ronald R. Krueger, MD, MSE



Raymond A. Applegate, OD, PhD

consideration of spot size and outcome quality, followed by competing views on fixed versus variable spot ablation by Alcon Summit Autonomous and VISX. Also included, as a key paper, is the influence of corneal curvature on the calculation of the ablation patterns.

In the clinical perspectives section, we present the paper by Susana Marcos, PhD (Founder's Award recipient for best paper) on aberrations and visual performance following conventional laser vision correction. In addition, key papers on the influence of aberration measurements in accommodation and the clinical results with the WASCA Asclepiion work station are presented.

Finally, the commercial perspective section, which was held as a "mock trial," asked each company to reveal their secrets to six specific questions. The answers to those questions are presented here, as a key paper by the Alcon Summit Autonomous

witness testimony, followed by a table summarizing the testimonies of each of the other participating corporate witnesses.

In all, this proceedings gives a flavor of why a sequel can be as good as the original.

As a further step, we proudly announce that the 3rd International Congress of Wavefront Sensing and Aberration-free Refractive Correction will be held on February 15-17, 2002, at the Casino Kursaal in Interlaken, Switzerland. For 3rd International Congress registration information, access <<http://www.wavefront-congress.org>>. With this introduction, you can be assured that the original congress and its sequel have now become an annual event.

Ronald R. Krueger, MD, MSE
Raymond A. Applegate, OD, PhD
Proceedings Editors