Saturday Feb. 21- Short Course in Ophthalmic Wavefront Sensing

Short Course Moderator: Michael Mrochen, PhD

11:30 am — 1:00 pm  Registration – MacDonald Foyer

1:00 pm — 6:00 pm  Short course in Ophthalmic Wavefront Sensing

1:00 pm — 2:00 pm  Optics of Wavefront
Austin Roorda, PhD University of Houston, Houston, TX

2:00 pm — 2:30 pm  ANSI Standards for Reporting Wavefront
Charlie Campbell, PhD, Berkeley, CA

2:30 pm — 3:00 pm  Transferring Wavefront Measurements to Ablation Profiles
Michael Mrochen, PhD, Institute for Biomedical Engineering at University and Swiss Federal Institute of Technology, Zurich, Switzerland

3:00 pm — 3:30 pm  Interpreting Wavefronts
Ronald R. Krueger, MD, MSE, Cleveland Clinic, Cleveland, OH

3:30 pm — 4:00 pm  Break

4:00 pm — 6:00 pm  Unresolved Hot Topics

4:00 pm — 4:30 pm  Interactions Between Aberrations Improve or Decrease Visual Performance
Ray Applegate, OD, PhD, University of Houston, Houston, TX

4:30 pm - 5:00 pm  What's Better Than a Perfect Optical Correction?
Steve Burns, PhD Schepens Eye Research Institute, Boston, MA

5:00 pm — 5:30 pm  Does Chromatic Aberration Hinder or Help?
Larry N. Thibos, PhD, Indiana University, Indianapolis, IN

5:30 pm — 6:00 pm  Aberrations and Emmetropization
Howard Howland, MD, Cornell University, Ithaca, NY

6:00 pm — 7:00 pm  Wavefront Congress Opening Reception
7:00 pm — 8:00 pm  |  Scientific Poster Presentations

7:00 pm – 7:06 pm  |  Corneal Thickness and Elevation Maps Computed From Optical Rotary Scans  
Sandra Franco PhD, Universidad do Minho, Braga, Portugal

7:06 pm – 7:12 pm  |  Wavefront Sensor Using Near-Field Diffraction Effects  
Larry Horowitz, PhD, Seal Beach, CA

7:12 pm – 7:18 pm  |  Dynamic measurement of accommodation using the COAS aberrometer  
Dan Neal, PhD, Wavefront Sciences Albuquerque, NM

7:18 pm – 7:24 pm  |  Biomechanical Model of the Cornea  
Peter M. Pinsky, PhD, Stanford University, Stanford, CA

7:24 pm – 7:30 pm  |  The Efficacy of Wavefront Guided Ablations on Customized Eye Models  
David Priest, University of Ottawa Eye Institute, Ottawa, ON, Canada

7:30 pm – 7:36 pm  |  Corneal Asphericity and Retinal Image Quality: Clinical Data and Simulations  
Seema Somani, PhD, VISX Inc., Santa Clara, CA

7:36 pm – 7:42 pm  |  Determining a Patient’s Subjective Refraction Using Objective Measurement  
Shui Lai, PhD, Ophthonix Inc., San Diego, CA

7:42 pm – 7:48 pm  |  Objective Estimates of Subjective Refraction from Wavefront Aberration  
Charles Coe, OD, Indiana University, Bloomington, IN

7:48 pm – 7:54 pm  |  Can Dry Eye Influence the Wavefront Measurements and Alter the Treatment Results  
Mirko Jankov, MD, Instituto de Ofal mologia de Curitiba, Curitiba, Brazil

7:54 pm - 8:00 pm  |  Variation of Wavefront Aberration of Eye Over Days  
Shui Lai, PhD, Ophthonix Inc., San Diego, CA

8:00 pm – 8:06 pm  |  Wavefront Aberrations After Hypermetropic LASIK and Lensectomy  
David Atchison, PhD, School of Optometry, QUT, Kelvin Grove, Australia

8:06 pm – 8:12 pm  |  Comparing the clinical results of 5 aberrometers  
Jos Rozema, Msc, University of Antwerp, Antwerp, Belgium

8:12 pm – 8:18 pm  |  Multifocality of Higher Order Aberrations after Conductive Keratoplasty  
Kristin Fry, OD, MS, Cornea & Laser Eye Institute, Teaneck, NJ
8:18 pm – 8:24 pm  
**Optical Aberrations in Patients After Diffuse Lamellar Keratitis**  
Mauro Campos, Paulista School of Medicine, Sao Paulo, Brazil

8:24 pm – 8:30 pm  
**Large Ablation vs. Custom Ablation in Large Pupil Patients – 3 Case Presentations**  
James Salz, MD, Laser Vision Medical Associates, Los Angeles, CA
Sunday, Feb. 22 Wavefront Congress

7:00 am — 7:50 am   Registration

7:50 am — 9:40 am   SECTION I- Scientific Perspective I

7:50 am - 8:00 am   Session Moderator and Opening Remarks
Ray Applegate, OD, PhD, University of Houston, Houston, TX

8:00 am - 8:20 am   Systemic Evaluation of Outcomes
Guy M. Kezirian, MD, SurgiVision Consultants, Paradise Valley, AZ,
Malvina B. Eydelman, MD, Food & Drug Administration, Rockville, MD
Bruce Drum, PhD, Food and Drug Administration, Rockville, MD

8:20 am - 8:40 am   Advantages and Disadvantages of Zernike Expansion for Representing
Wave Aberration of the Normal and Highly Aberrated Eye
Stephen Klyce, PhD, Louisiana State University, New Orleans, LA

8:40 am - 9:00 am   Limits of Higher Order Correction Based on Spot
Size, Aberration Depth, and Tracker Responsiveness
Michael Bueeler, MS, University Hospital, Zurich, Switzerland

9:00 am - 9:20 am   New Frontiers and Limitations of FS-Lasers in Corneal Laser Surgery
Dr. Georg Korn, Katana Technologies GmbH, Kleinmachnow, Germany

9:20 am - 9:40 am   Wavefront Sensing and the Tear Film
Takashi Fujikado, MD, PhD Osaka University Medical School
Osaka, Japan

9:40 — 10:00 am   Break

10:00 — 12:00 pm  SECTION II- Scientific Perspective II
Session Moderator Ronald R. Krueger, MD

10:00 am — 10:20 am   Plasticity, Adaptation and Evaluation of Outcomes
Professor Pablo Artal Universidad de Murcia, Murcia, SPAIN

10:20 am — 10:35 am   Reversal of Refractive Ambylopia with Wavefront Customized
Ablation Takes One to Two Years
Theo Seiler, PhD, Institute for Refractive and Oculoplastic Surgery,
Zurich, Switzerland

10:35 am — 10:55 am   Depth of Focus, Spatial Frequencies and Quality of Life
Professor Neil Charman, University of Manchester Institute of
Science & Technology, Manchester, UK

10:55 am — 11:15 am   Do Aberration Changes with Accommodation Really Matter?
Austin Roorda, PhD, University of Houston, Houston, TX
11:15 am — 11:35 am  
**From Theoretical Laser Ablation Design to Real Outcomes: Implications For Optimized Corneal Refractive Correction**  
**Susana Marcos, PhD, Instituto de Optica, CSIC, Spain**

11:35 am – 11:50 pm  
**Wavefront Outcomes of IntraLase vs. Hansatome LASIK**  
**Daniel Durrie, MD, Hunkeler Eye Institute, Overland Park, KS**

11:55 am — 12:55 pm  
**Luncheon**

*Sunday, Feb. 22 Wavefront Congress (continued)*

12:55 pm — 2:00 pm  
**SECTION III- Non-Surgical and Surgical Approaches**  
Session Moderator Larry Thibos, PhD

1:00 pm — 1:15 pm  
**Non-accommodative Expansion of Dynamic Range: What Have We Learned?**  
**Ian Cox, PhD, Bausch & Lomb Inc., Rochester, NY**

1:15 pm — 1:30 pm  
**Clinical Outcomes of Presbyopic Corrections**  
**Bruce Jackson, MD, University of Ottawa Eye Institute, Ottawa Ontario, Canada**

1:30 pm — 1:45 pm  
**Smoothing Highly Aberrated Eyes Into a Clinically Measurable and Treatable Range**  
**Professor Paolo Vinciguerra, University of Varese Italy, Milan Italy**

1:45 pm — 2:00 pm  
**Does Size Matter? The impact of Ablation Zone and Pupil Size**  
**Arthur Bradley, PhD, Indiana University, Bloomington, IN**

2:00 pm — 4:00 pm  
**SECTION IV- Customized Ablation: Highly Aberrated Eyes**  
Session Moderator Ronald R. Krueger, MD

2:00 pm — 2:15 pm  
**VISX Inc.**  
**Robert Maloney, MD, Maloney Vision Institute, Los Angeles, CA**

2:15 pm — 2:30 pm  
**Alcon Laboratories**  
**Maria Regina Chalita, MD, Cleveland Clinic Foundation, Cleveland, OH**

2:30 pm — 2:45 pm  
**Wavelight Laser Technologie AG**  
**Matthias Maus, MD**

2:45 pm — 3:00 pm  
**Bausch & Lomb Inc.**  
**Scott MacRae, MD, University of Rochester, Center for Visual Science, Rochester, NY**

3:00 pm — 3:15 pm  
**Carl Zeiss Meditec**  
**Dan Z. Reinstein, MD St. Thomas Hospital, Kings College, London London, UK**

3:15 pm — 3:30 pm  
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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>3:30 pm — 3:45 pm</td>
<td><strong>Question &amp; Answer</strong></td>
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<tr>
<td>3:45 pm – 4:15 pm</td>
<td><strong>Break</strong></td>
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Sunday, Feb. 22 Wavefront Congress (continued)

**4:15 pm — 5:45 pm**  
**SECTION V- Industry Answers Questions From The Audience**  
**Session Moderator & Introduction, George Waring, MD**

- **Visx Inc.**  
  Robert Maloney, MD, Dimitri Chernyak, PhD

- **Wavelight Laser Technologie AG**  
  Matthias Maus, MD, Mr. Mathias Glasmacher

- **Alcon Laboratories**  
  Ronald Krueger, MD, George Pettit, MD, PhD

- **Bausch & Lomb Inc.**  
  Scott MacRae, MD, Ian Cox, PhD

- **Carl Zeiss Meditec**  
  Dan Reinstein, MD, Mr. Jesus Cabeza

- **Nidek Inc.**  
  Howard Gimbel, MD, Mr. Rich Bains

- **Schwind Eye Tech Solutions**  
  Mr. Hartmut Vogelsang

**5:45 – 6:00 pm**  
**Questions from the Audience**

**7:00 pm — 10:00 pm**  
**Gondola Ride and Dinner at the Round House-**  
Meet in hotel lobby at 6:30 pm for walk to Gondola

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**Monday, Feb. 23, Wavefront Congress**

**7:00 am — 8:00 am**  
**Registration**

**8:00 am — 11:45 am**  
**SECTION VI- Founders Workshops**

**8:00 am — 9:45 am**  
Founders Workshops  
**Wavelight Laser Technologie – Lombard Room**  
Mathias Glasmacher, PhD, David Lin, MD, Michael Mrochen, PhD,  
Mirko Jankov, MD, Franziska Veit, Prema Padmanabhan, MD,

- **Alcon Laboratories – Empress A Room**  
  Ray Applegate, PhD, Maria Regina Chalita, MD, Dan Durrie, MD,  
  Ronald Krueger, MD

- **Bausch & Lomb – Empress C Room**  
  Ian Cox, PhD
9:45 am — 10:00 am  Break

Monday, Feb. 23 Wavefront Congress (continued)

10:00 am — 11:45 am  Founders Workshops

Visx Inc. – Kananaskis Room
Dimitri Chernyak, PhD, Bruce Jackson, MD, Robert Maloney, MD, Marguerite McDonald, MD, Steven Schallhorn, MD

Carl Zeiss Meditec -
Dan Z. Reinstein, MD, Eckhard Schroder, Ronald Wendenburg

11:45 am — 1:00 pm  Luncheon

1:00 pm — 2:20 pm  SECTION VII- Correcting the Eye from the Outside – MacDonald Ballroom
Session Moderator, Austin, Roorda, PhD

1:00 pm- 1:20 pm  Adaptive Optics in Imaging
Austin Roorda, PhD University of Houston, Houston, TX

1:20 pm — 1:40 pm  On the Possibility of Intraocular Adaptive Optics
Dr. Gleb Vdovin, Electronic Instrumentation, Delft, Netherlands

1:40 pm — 2:00 pm  Phase Plates for Correcting Aberrations
Guenyoung Yoon, PhD University of Rochester, Rochester, NY

2:00 pm — 2:36 pm  Break

2:36 pm — 5:30 pm  SECTION VIII- Free Papers
Session Moderator, Raymond Applegate, OD, PhD
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<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>2:36 pm – 2:48 pm</td>
<td>Complex Wavefront Retreatments after Conventional LASIK</td>
<td>Brian Boxer Wachler, M.D, Boxer Wachler Vision Institute, Beverly Hills, CA</td>
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<td>2:48 pm – 3:00 pm</td>
<td>Low Cost High Resolution Wavefront Corrector for Aberration in Human Eyes</td>
<td>Xinghua Wang, PhD, Liquid Crystal Institute, Kent State University, Kent, OH MacDonald A-F</td>
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<td>3:00 pm – 3:12 pm</td>
<td>Refractive Representation of Primary Wavefront Aberrations</td>
<td>Nicolas Chateau, PhD, Imagine Eyes, Orsay, France</td>
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<td>3:12 pm – 3:24 pm</td>
<td>Improvements in Calculation and Visualization of Wavefront-Driven Point Spread Functions</td>
<td>Erik Gross, BS, VISX Inc., Santa Clara, CA</td>
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<td>3:24 pm – 3:36 pm</td>
<td>Topography-guided customized ablation treatments (T-CAT) with WaveLight ALLEGROTTTO WAVE</td>
<td>Mirko Jankov, MD, Instituto de Ofalmologia de Curitiba, Curitiba, Brazil</td>
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<td>3:36 pm – 3:48 pm</td>
<td>The Clinical Utility of High Resolution Images from an Adaptive Optics Retinal Imager</td>
<td>Peter Soliz, PhD, Kestrel Corporation, Albuquerque, NM</td>
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<td>3:48 pm – 4:00 pm</td>
<td>Results of Wavefront-guided Ablation for Myopia and Astigmatism Correction in Primary Eyes</td>
<td>Regina Maria Chalita, MD, Cleveland Clinic Foundation, Cole Eye Institute, Cleveland, OH</td>
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<td>4:00 pm – 4:12 pm</td>
<td>Flap-Induced and Laser-Induced Ocular Aberrations In a Two-Step LASIK Procedure</td>
<td>Ann Laurenzi, OD, Cleveland Clinic Foundation, Cole Eye Institute, Cleveland, OH</td>
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<td>4:12 pm – 4:24 pm</td>
<td>Using Shack-Hartmann Images to Evaluate Nuclear Cataract II</td>
<td>William J. Donnelly III, M.S., Visual Optics Institute, Univ. of Houston College of Optometry, Houston, TX</td>
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<td>4:24 pm – 4:36 pm</td>
<td>The Effect of Higher Order Wavefront Aberrations on Binocular Summation</td>
<td>Han-Bor Fam, MBBS, M.Med The Eye Institute, Singapore</td>
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<td>4:36 pm – 4:48 pm</td>
<td>Measuring visual acuity – high or low luminance, and high or low contrast?</td>
<td>Konrad Pesudovs, PhD, Visual Optics Institute, University of Houston College of Optometry, Houston, TX</td>
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<tr>
<td>4:48 pm – 5:00 pm</td>
<td>Wavefront Guided RE LASEK with Wavelight Concept 500</td>
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5:00 pm – 5:12 pm  Results of U.S. Clinical Trial Comparing Wavefront-guided PRK and Wavefront-Guided LASIK
Steven Schallhorn, MD, Naval Medical Center San Diego, San Diego, CA

5:12 pm – 5:24 pm  Initial Evaluation of a Randomized Clinical Trial of Custom vs. Conventional Excimer Laser Treatment of Refractive Errors
Mauro Campos, MD, Paulista School of Medicine, Sao Paulo, Brazil

5:30 — 6:00 pm  Refreshments

6:00 — 7:30 pm  SECTION IX - Metrics of Optical Performance Predictive of Visual Performance

6:00 pm — 6:20 pm  Determining Sphero-Cylindrical Corrections From Wave Aberrations
Larry Thibos, PhD, Indiana University, Bloomington, IN
6:20 pm — 6:40 pm  Correlation of Aberrations to Vision and the Phase Transfer Function
Edwin J. Sarver, PhD, Sarver & Associates, Celebration, FL

6:40 pm — 7:00 pm  Improving Visual Function Diagnostic Metrics
Charlie Campbell, PhD, Berkeley, CA

7:00 pm — 7:10 pm  Closing Remarks