SUNDAY, NOVEMBER 10, 2019
(Presentations are 20-minutes long, plus a 10-minute Q & A – Challenge period)

7:00 - 8:00 a.m. CONTINENTAL BREAKFAST

7:45 - 7:55 am WELCOME & INTRODUCTION
Paul Edwards, M.D. Chair, Department of Ophthalmology, Henry Ford Health System, Detroit, Michigan

7:55 - 8:00 am HOUSEKEEPING ANNOUNCEMENTS
David J. Goldman, M.D., M.B.A. Associate Medical Director, Detroit Institute of Ophthalmology, Director of Residency Program, Department of Ophthalmology, Henry Ford Health System, Detroit, Michigan

Session One: Current Clinical Trials, Patient Outcomes and Experiences

MODERATOR – Lauren Ayton, Ph.D., University of Melbourne, Melbourne, Australia

8:00 - 8:30 a.m. Orion Visual Cortical Prosthesis System: One-Year Clinical Trial Results
Jessy Dorn, Ph.D., Second Sight, Sylmar, California

8:30 - 9:00 a.m. The Bionic Vision Technologies Suprachoroidal Retinal Prosthesis: Interim Clinical Results
Matthew Petoe, Ph.D., Bionic Vision Technologies, Melbourne, Australia

9:00 - 9:30 a.m. Photovoltaic Restoration of Sight in Age-related Macular Degeneration: One-Year Clinical Results
Daniel Palanker, Ph.D., Stanford University, Stanford, California
Yannick Le Mer, M.D., Pixium-Vision, Paris, France
9:30 - 10:00 a.m.  BREAK

10:00 - 10:30 a.m.  Towards a Cortical Visual Neuroprosthesis for the Blind: Preliminary Results in a Human  
  Eduardo Fernandez, M.D., Ph.D., University of Miguel Hernandez, Elche, Spain

10:30 - 11:00 a.m.  The Perceptual Experience of Artificial Vision: Qualitative Reports of Epiretinal Implant Users  
  Cordelia Erickson-Davis, M.D., Stanford University  
  Helma Korzybska, Ph.D. Candidate, Paris Nanterre University, Paris, France

11:00 - 11:30 a.m.  GROUP DISCUSSION

11:30 - 12:30 p.m.  LUNCH

**Session Two: Improving Patient Outcomes and Experiences with Current Generation Devices**

  MODERATOR – Gislin Dagnelie, Ph.D., Johns Hopkins Hospital, Baltimore, Maryland

  12:30 - 1:00 p.m.  Educational Techniques to Enhance Comprehension of Complex Information  
  Frank Lane, Ph.D., Illinois Institute of Technology, Chicago, Illinois

  1:00 - 2:00 p.m.  PANEL – HOVER Update  
  Members: Lauren Ayton, Ph.D., University of Melbourne, Australia  
  Joseph Rizzo, M.D., Harvard Medical School, Boston, Massachusetts

  2:00 – 2:30 p.m.  Novel Vision Processing Method Facilitates Color-Contrast Object Detection in Participants Implanted with a Suprachoroidal Retinal Prosthesis  
  Nick Barnes, Ph.D., Bionic Vision Technologies, Melbourne, Australia

  2:30 - 3:00 p.m.  The Color Option  
  Vernon Towle, Ph.D., Illinois Institute of Technology, Chicago, Illinois

  3:00 - 3:30 p.m.  BREAK
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<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter(s)</th>
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<tr>
<td>3:30 - 4:00 p.m.</td>
<td>Temporal Dithering of Epiretinal Stimulation to Optimize Artificial Vision</td>
<td>Nishal Shah, M.Sc., Stanford University, Stanford, California</td>
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<td>4:00 - 4:30 p.m.</td>
<td>Applications of Deep Learning AI to Neural Signal Analysis, Sight Perception, Device Design and Neural Stimulation Patterning</td>
<td>Greg Auner, Ph.D. Wayne State University, Henry Ford Health System, Detroit, Michigan</td>
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<td>4:30 - 5:00 p.m.</td>
<td>Pulse Trains to Percepts: The Challenge of Creating a Perceptually Intelligible World Based on Cortical Stimulation of Early Visual Areas</td>
<td>Ione Fine, Ph.D., University of Washington, Seattle, Washington</td>
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<td>5:00 - 6:00 p.m.</td>
<td>PANEL - TBD</td>
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<td>6:30 - 9:00 p.m.</td>
<td>BARTIMAEUS DINNER</td>
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MONDAY, NOVEMBER 11, 2019
(Presentations are 20-minutes long, plus a 10-minute Q & A – Challenge period)

7:00 - 8:00 a.m.  CONTINENTAL BREAKFAST

7:45 – 7:55 a.m.  WELCOME & INTRODUCTION
Philip C. Hessburg, M.D., Medical Director, Detroit Institute of Ophthalmology, Henry Ford Health System, Grosse Pointe, Michigan

7:55 – 8:00 a.m.  HOUSEKEEPING ANNOUNCEMENTS
David Goldman, M.D., M.B.A, Associate Medical Director, Detroit Institute of Ophthalmology, Director of Residency Program, Department of Ophthalmology, Henry Ford Health System, Detroit, Michigan

Session Three: Next Generation Devices

MODERATOR – James Weiland, Ph.D. University of Michigan, Ann Arbor, Michigan

8:00 - 8:30 a.m.  Intracortical Visual Prosthesis (ICVP): Progress Towards the Clinical Trial
Philip Troyk, Ph.D., Illinois Institute of Technology, Chicago, Illinois

8:30 - 9:00 a.m.  OptoViS: Optogenetic Visual Cortical Prosthesis
Patrick Degenaar, Ph.D., Newcastle University, Newcastle, United Kingdom

9:00 - 9:30 a.m.  Towards the Development of a Micro-coil Based Cortical Visual Prosthesis
Shelley Fried, Ph.D., Massachusetts General Hospital, Boston, Massachusetts

9:30 - 10:00 a.m.  BREAK

10:00 - 10:30 a.m.  The High Resolution Imaging Retinal Prosthesis (HARP4k) -- Status Update on Tissue Tolerance
Long-Sheng Fan, Ph.D., Iridium Medical Technology Co., Ltd., Taiwan, Republic of China

10:30 - 11:00 a.m.  Real-time Beam Trajectory Control for Fully Wireless Optically Powered Epiretinal Protheses
Ross Cheriton, Ph.D., Australia – Canada Bionic Vision Collaboration, Ontario, Canada

11:00 - 11:30 a.m.  GROUP DISCUSSION

11:30 - 12:30 p.m.  LUNCH

Session Four: Next Generation Devices and Materials

MODERATOR - Daniel Rathbun, Ph.D., Henry Ford Health System Bionics and Vision Lab, Detroit, MI

12:30 - 1:00 p.m.  A Silk Fibroin Biohybrid Thalamic Visual Neuroprosthesis. First Steps for the Development of the Biohybrid Retina
Fivos Panetsos, Ph.D., VISNE, Madrid, Spain

1:00 – 2:00 p.m.  PANEL – Cortical Prostheses
Members: Avi Caspi, Ph.D., Jerusalem College of Technology, Jerusalem, Israel
Patrick Degenaar, Ph.D., University of Newcastle, Newcastle, United Kingdom
Eduardo Fernandez, M.D., Ph.D., University of Miguel Hernandez, Elche, Spain
Shelley Fried, Ph.D., Massachusetts General Hospital, Harvard Medical School, Boston MA
Phil Troyk, Ph.D., Illinois Institute of Technology, Chicago, Illinois

2:00 - 2:30 p.m.  The Diamond Eye: Architecture and Reduction to Practice
Steven Prawer, Ph.D., Australia-Canada Bionic Vision Consortium, Victoria, Australia

2:30 - 3:00 p.m.  A Fully Wireless 288 Electrodes Retinal Implant with an Optical Data and Power Link with Ultrananocrystaline Diamond Electrodes
William LeMaire, Ph.D., Canada-Australia Bionic Vision Consortium, Sherbrooke, Canada

3:00 - 3:30 p.m.  BREAK

3:30 - 4:00 p.m.  In-vitro Study and Capacitive Behavior of Photovoltaic, Subretinal Implant with 3D Carbon Electrodes
Rasmus Davidsen-Schmidt, Ph.D., Technical University of Denmark, Lyngby, Denmark
4:00 - 4:30 p.m.    Nanowire Arrays Restore Vision in Blind Mice
                    Jiayi Zhang, Ph.D., Fudan University, Shanghai, China

4:30 – 5:00 p.m.    Expanding the Restorative Capacity of Visual Prostheses Beyond
                    Retinal Diseases: Neurofibromatosis as an Iconic Example
                    Steven Stasheff, M.D., Ph.D., National Institute of Health
                    National Eye Institute, Bethesda, Maryland

5:00 – 5:30 p.m.    GROUP DISCUSSION

5:30 – 7:30 p.m.    POSTER PRESENTATIONS AND COCKTAIL HOUR
TUESDAY, NOVEMBER 12, 2019
(Presentations are 20-minutes long, plus a 10-minute Q & A – Challenge period)

7:00-8:00 a.m.  CONTINENTAL BREAKFAST

7:55 a.m.  HOUSEKEEPING ANNOUNCEMENTS
David J. Goldman, M.D., M.B.A., Associate Medical Director, Detroit Institute of Ophthalmology, Director of Residency Program, Department of Ophthalmology, Henry Ford Health System, Detroit, Michigan

Session Five: Understanding the Degenerate Retina and Visual Pathway

MODERATOR- Eberhart Zrenner, M.D., University of Tuebingen, Tuebingen, Germany

8:00 - 8:30 a.m.  Electrical Response Clustering of Mouse Retinal Ganglion Cells
Daniel Rathbun, Ph.D., Henry Ford Bionics and Vision Lab, Detroit, Michigan

8:30 - 9:00 a.m.  Experimentally Constrained Predictions of the Efficacy of a Global Activity Shaping Strategy
Martin Spencer, Ph.D., Bionic Vision Technologies, Melbourne, Australia

9:00 - 9:30 a.m.  Replicating a More Physiological Retinal Neural Code Using High-Rate Electrical Stimulation
Tianruo Guo, Ph.D., University of New South Wales, Sydney, Australia

9:30 - 10:00 a.m.  BREAK

10:00 - 10:30 a.m.  Real Time Imaging of the Microglio Response to Electrical Overstimulation of the Retina Under Epiretinal Stimulus Electrodes
Ethan Cohen, Ph.D., US FDA, Silver Spring, Maryland

10:30 - 11:00 a.m.  Cortical Interactions Between Prosthetic and Natural Retinal Responses – Implications for Restoration of Central Vision
Yossi Mandel, M.D., Ph.D., Bar-Ilan University, Ramat Gan, Israel

11:00 - 11:30 a.m.  GROUP DISCUSSION

11:30 - 12:30 p.m.  LUNCH AND POSTER AWARDS
Session Six: Where to from here?

MODERATOR – Edward O’Malley, M.D., Department of Ophthalmology, Henry Ford Health System, Detroit, MI

12:30 - 1:00 p.m. The Challenge to Meet the Expectations of Patients, Ophthalmologists and Public Healthcare Systems with Current Retinal Prostheses
Eberhart Zrenner, M.D., University of Tuebingen, Tuebingen, Germany

1:00 – 2:00 pm PANEL – Where to From Here? Challenges and Opportunities
Members: Joseph Rizzo, M.D., – Mini- Symposium
Harvard Medical School, Boston, Massachusetts
Robert Greenberg, M.D., Ph.D. - Lessons Learned
Alfred Mann Foundation, Valencia, California
Alfred Stett, M.D., Reutlingen, Germany
Philip Troyk, Ph.D., Illionis Institute of Technology
Eberhart Zrenner, M.D., University of Tuebingen, Germany

2:00 – 2:30 p.m. Wrap-up – Plans for 2021!!
Lauren Ayton, Ph.D.
David J. Goldman, M.D., M.B.A.
Philip C. Hessburg, M.D.
Roseanne Horne
Edward O’Malley, M.D.
Joseph Rizzo, M.D
Philip Troyk, Ph.D.
James Weiland, Ph.D.