



DECADE OF VISION
2010-2020
an initiative of the
Alliance For Eye And Vision Research

**FOUNDATION FIGHTING BLINDNESS (FFB) and
ALLIANCE FOR EYE AND VISION RESEARCH'S
(AEVR) *DECADE OF VISION 2010-2020 INITIATIVE***

*present an educational briefing on a breakthrough
development in eye and vision research on the eve of
Healthy Vision Month, May 2010*

Luncheon Briefing

*“The Bionic Eye: An Artificial Retina that
Brings Sight to the Blind”*

Thursday, April 29, 2010

12:00 Noon – 1:15 pm

House Rayburn B-339

Please RSVP to
Dina Beaumont at 202-530-4672 or dinabeau@aol.com

FFB and AEVR are 501(c)3 Non-Profit Foundations hosting this widely
attended event.

**Foundation Fighting Blindness/Alliance for Eye and Vision Research
Congressional Briefing
*“The Bionic Eye: An Artificial Retina that Brings Sight to the Blind”***

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What is the Artificial Retina, and why is it important?

The Artificial Retina is a novel technology that uses a microelectronic implant that restores vision to patients who are blind from major retinal diseases. These diseases affect more than 20 million Americans, and the National Eye Institute (NEI) within the National Institutes of Health (NIH) estimates that vision impairment and eye disease cost the United States more than \$68 billion annually.

To date, 38 patients with virtually no vision have been implanted worldwide in clinical trials—six patients with the Argus I beginning in 2002, and 32 patients with the Argus II in 2007, the second generation of the device with 60 stimulating electrodes. In the total seven years of follow-up, these patients cumulatively have had 47 years of testing showing that the Argus platform has excellent safety and efficacy. The Argus devices are currently the only such devices authorized by the Food and Drug Administration (FDA) for testing in the clinic and at home. The device has enabled the patients to find, count, and recognize objects such as doors and parked cars. Simple tasks, such as eating and sorting laundry, are more manageable. Locomotion and navigation are improved, as patients avoid bumping into or stumbling over objects which would otherwise lead to injuries. Argus II could potentially help tens of thousands of blind individuals.

However, to provide resolution that is high enough to read and recognize faces, the Artificial Retina will need to have 1,000 electrodes. An Artificial Retina with such resolution could exponentially increase the number of patients who could be helped by the device. The Artificial Retina Consortium continues to make steady progress towards the goal of developing the 1,000-electrode implant.

How is this research funded?

The Artificial Retina represents a unique partnership of federal and private funding sources that engage researchers from national government laboratories, universities, and industry. Federal funding is provided primarily by the Department of Energy (DOE), due to the need for sophisticated engineering techniques, as well as by the National Science Foundation (NSF) and the NIH. Private funding has been provided by the industry partner, Second Sight Medical Products of Sylmar, California. Other non-profit private foundations, such as the Foundation Fighting Blindness (FFB), have also provided funding.

Most importantly, this research represents the confluence of the biomedical and physical sciences and demonstrates the value of federal investment in vision research.

About the speaker

Mark Humayun, M.D., Ph.D., is a Professor of Ophthalmology and Biomedical Engineering at the Doheny Eye Institute at the University of Southern California (USC) and the lead investigator on Artificial Retina research. He has pioneered that field of research and has been recognized repeatedly as one of the best doctors in the United States. He is a member of the Institute of Medicine (IOM) of the National Academies of Sciences (NAS).

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