



DECADE OF VISION 2010-2020

an initiative of the
Alliance For Eye And Vision Research

Clinician-Scientist Educates Congress About Robo4 Protein Pathway AMD Research

On September 22, AEVR's *Decade of Vision 2010-2020 Initiative* sponsored a Congressional briefing that recognized *International Age-related Macular Degeneration (AMD) Awareness Week 2009* (September 19-25).

Kang Zhang, M.D., Ph.D., professor of Ophthalmology and Human Genetics at the Shiley Eye Center and Director of the Institute for Genomic Medicine

Our research could result in a minimally-invasive therapy to treat AMD, such as an eye drop or a pill. Dr. Kang Zhang

quired to test treatments for AMD, as well as for diabetic retinopathy, could be shortened. "Our research is already looking at a small molecule approach to activate the Robo4 protein pathway, which could result in a minimally-invasive therapy to treat AMD, such as an eye drop or a pill," said Dr. Zhang.

Dr. Zhang's research has been funded by the NEI, which has described his work as



Kang Zhang, M.D., Ph.D. discusses the dramatic implications of his AMD research



Dr. Zhang (right) was joined by representatives of co-sponsor organizations, including Cynthia Stuen, Ph.D. (Lighthouse International) and Allie Laban-Baker (AMD Alliance International)



Dr. Zhang with Colonel Donald Gagliano, M.D., Director of the DOD's Vision Center of Excellence (VCE). DOD's is funding Robo4 Pathway research through its extramural Peer Reviewed Medical Research Program (PRMRP).



Dr. Zhang met with representatives of his work and home Congressional districts. Left to right: AEVR's James Jorkasky and Spencer Young (center) of the office of Cong. Susan Davis (D-CA), who has sponsored "Dear Colleague" letters urging Congressional support for NIH

at the University of California at San Diego, spoke about his research into AMD, which focuses on the role of Robo4, which is a protein found only in cells in the interior surface of blood vessels. Once the protein is activated, it initiates a chain of biochemical events to stabilize blood vessels and prevent uncontrolled growth and leakage. In the "wet" form of AMD, new blood vessels grow into a part of the retina (the light sensitive back of the eye) called the macula, which is necessary for central vision. These new blood vessels are often unstable and leak, affecting vision. In a March 2008 study published in *Nature Medicine*, a team of researchers led by Dr. Zhang and Dean Li, M.D., Ph.D., (University of Utah), reported that damage from AMD could be prevented or even reversed when the Robo4 protein was activated in mice models that simulated the disease, inhibiting abnormal blood vessel growth and stabilizing blood vessels to prevent leakage.

Dr. Zhang's research has used the same animal models required for drug development, meaning that the timeframe re-

"a prime example of basic science research yielding a discovery with direct clinical applications." He has also been supported by the private funding foundations Research to Prevent Blindness (RPB) and Burroughs Wellcome Fund.

AEVR Executive Director James Jorkasky noted Dr. Zhang is the recipient of two ARRA-funded NEI grants—a joint project with the Doheny Eye Institute/University of Southern California on the genetic basis of diabetic retinopathy in the Latino population, and support for education of science teachers/summer students. For many attendees, this was the first opportunity to meet an ARRA-funded investigator and to learn about the scientific and economic impact of that research.

AEVR's *Decade of Vision 2010-2020 Initiative* provides sustained education about the impact of eye disease and vision impairment. In House Resolution 366 and Senate Resolution 209 passed earlier this year, Congress designated 2010-2020 as the decade of vision and acknowledged the 40th anniversary of the NEI.



Dr. Zhang with Gary Kline of the office of Cong. Brian Bilbray (R-CA), also a strong NIH supporter

AEVR acknowledges its co-sponsors:

Congressional Vision Caucus

AMD Alliance International

ARVO

Lighthouse International

Prevent Blindness America