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Contact: Meghan Lewit
(323) 442-3941
lewit@usc.edu

Keck School of Medicine of USC-Led Team Receives Popular Mechanics Breakthrough Award For Retinal Implant Project

Los Angeles, Calif., Sept. 30, 2010—Keck School of Medicine of the University of Southern California (USC) scientists Mark Humayun and James Weiland, leaders of the Artificial Retina Team, are recipients of a 2010 *Popular Mechanics* Breakthrough Award for their role in developing the Argus II retinal implant. The device restores partial sight to people blinded by degenerative retinal diseases.

Popular Mechanics Breakthrough Awards recognize innovators and products that have moved society forward in 2010.

“Drs. Humayun and Weiland are world-class innovators and leaders in bioscience,” said Keck School of Medicine Dean Carmen A. Puliafito, M.D., M.B.A. “The Breakthrough Award is a great honor, and further recognition of their continuing work to improve the quality of life for many patients.”

Ten million people in the United States suffer from retinal diseases such as macular degeneration and retinitis pigmentosa. The Argus II retinal implant takes images from an external video camera and sends electric signals to an electrode array implanted in the eye, bypassing damaged photoreceptors to kick-start retinal cells that are still viable. Patients who have had artificial retina systems implanted can distinguish between light and dark and recognize objects.

International clinical trials are currently underway for this second generation implant with 60 electrodes. Second Sight Medical Products Inc. manufactures the Argus II system and sponsors the clinical trial. A massive collaborative effort involving five national labs, four universities and Second Sight is moving toward developing future generations of the device, which will hopefully provide enough resolution to recognize faces.

“With continued collaboration and funding, this goal of restoring even greater sight to blind patients is achievable within the near future,” said Humayun, M.D., Ph.D., professor of ophthalmology, cell and neurobiology, and biomedical engineering at the Keck School of Medicine of USC, the Doheny Eye Institute at USC and the USC Viterbi School of Engineering. Humayun is the director of the Department of Energy Artificial Retina Project, director of the NSF Biomimetic Microelectronic Systems Engineering Research Center and co-inventor of the retinal implant.

Weiland, Ph.D., is an associate professor of ophthalmology at the Keck School of Medicine and the Doheny Eye Institute, and is a co-leader on the Artificial Retina project. Members of the project team receiving the award includes researchers from the USC Viterbi School of Engineering, the Lawrence Livermore National Laboratory, the University of California, Santa Cruz, the California Institute of Technology, Sandia National Laboratory, and Second Sight Medical Products Inc., as well as the Oak Ridge, Argonne and Los Alamos National Laboratories of the US Department of Energy.

“This recognition is a tribute to the entire team of researchers,” Weiland said. “*Popular Mechanics* has long been on the forefront of technology and innovation, so to be named a Breakthrough Award winner is a true honor.”

Humayun, Weiland and USC neuroscientist Armand Tanguay will be featured in the November 2010 issue of *Popular Mechanics*, available on newsstands Oct. 12.

Winner profiles will be online at www.popularmechanics.com/breakthrough10

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