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**USC Roski Eye Institute experts share ground-breaking research in population-based eye diseases, sight restoration through retinal prosthesis and the latest diagnostic imaging device at the annual Association for Research in Vision and Ophthalmology Conference**

- *Largest U.S. eye studies among Chinese Americans and Latinos point to valuable prevention and treatment methods in vulnerable ethnic populations*
- *Study of the world's only Argus patient with both versions of retinal implant - one in each eye – indicate next steps in restoring vision to those with Retinitis pigmentosa*
- *Results of preclinical pilot studies to use prototype OCT-A resulted in recent FDA approval of imaging device*

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LOS ANGELES – At the upcoming Association for Research in Vision and Ophthalmology (ARVO) Conference in Seattle May 1-4, researchers from the University of Southern California (USC) Roski Eye Institute will showcase breakthrough study findings that will impact health care policy, help prevent and treat blinding eye disease in growing minority populations and provide innovative technologies that can lead to sight restoration or earlier diagnosis of eye diseases.

“Ocular health in America requires us to constantly push the envelope in research to uncover ways to prevent blinding eye diseases as well as restore sight to those who may have lost hope,” said Rohit Varma, MD, MPH, interim dean of the Keck School of Medicine of USC and director of the USC Roski Eye Institute. “Whether it is developing biomedical devices – such as our co-creation of the Argus retinal prosthesis system or the latest imaging techniques such as the OCT device we pioneered, diagnosing patients with various eye diseases – as well as discovering better ways to personalize our treatments and care to specific population needs such as our growing Asian American and Latino communities, that has been our mission for over 40 years.”

**AMD in Chinese Americans and Latinos**

Today, more than 2 million Americans have AMD and it is the leading cause of irreversible blindness in the U.S. Led by principal investigator and one of the world’s leading experts in ocular epidemiology, Dr. Varma and his research team will showcase two National Eye Institute (NEI)-funded studies – both the largest of their kind – indicating the changing

needs in diagnosis and treatment of age-related macular degeneration (AMD) in Chinese Americans, one of the fastest-growing ethnic group in America, and Latinos, the largest minority group in Los Angeles and the U.S. Both the *Chinese American Eye Study* (CHES) and *Los Angeles Latino Eye Study* (LALES) uncover new treatment insights for AMD in these populations, which together equal approximately 73 million currently in the U.S – about four in every 10 Americans.

The CHES study points to a higher relative prevalence of treatable neovascular age-related macular degeneration (wet AMD) than other ethnic populations; and the LALES Study indicates a lower health-related quality of life for Latinos with bilateral AMD. Both studies indicate access, early diagnosis and interventions can protect eye health and can lead to overall improved quality of life.

### **Refining the Argus retinal prosthesis with a patient's help**

Mark Humayun, MD, PhD, co-director of the USC Roski Eye Institute and recipient of the 2016 National Medal of Technology and Innovation from President Obama, co-created the Argus retinal implant system. With the help of the only patient in the world to have both versions of the Argus – one in each eye – Dr. Humayun and his team share the findings of the comparison study between Argus I (with just 16 electrodes) and FDA-approved Argus II (with 60 electrodes).

The patient, who was diagnosed with Retinitis pigmentosa (RP), an inherited retinal degenerative disease that affects about 100,000 people nationwide, was implanted with the first generation Argus in 2004 and recently had the Argus II implanted in 2015. During the more than 10 years between implants, the patient became a critical part of the research team helping define the differences in visual response between the two generations of the Argus system according to Dr. Humayun.

### **Pioneering Vision Science and Imaging Technology Using OCT**

As one of only two research sites chosen to conduct preclinical pilot studies using prototype OCT angiography (OCT-A) recently approved by the FDA in 2015, co-inventor of the ocular coherence tomography (OCT) imaging technology, Carmen Puliafito, MD, MBA, along with his team will present that latest research in OCT-A to quantify the microvascular mechanisms in diseases such as glaucoma, uveitis and optic neuropathies that may lead to earlier diagnosis and treatment interventions.

To see the full agenda of innovative research being presented by USC Roski Eye Institute researchers, visit: [ARVO.org](http://ARVO.org)

## **About the USC Roski Eye Institute**

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The USC Roski Eye Institute, part of the Keck Medicine of USC university-based medical enterprise, has been a leader in scientific research and innovative clinical treatments for 40 years. Among the top two funded academic-based medical centers by the National Eye Institute (NEI) research grants and ranked in the Top 10 ophthalmology programs in *U.S. News & World Report's* annual “Best Hospitals” issue for more than 20 years, the USC Roski Eye Institute is headquartered in Los Angeles with clinics in Arcadia, Beverly Hills and Pasadena.

Patients from across the country come to see the USC Roski Eye Institute experts who treat a comprehensive array of eye diseases across the life spectrum from infants to aging seniors. The USC Roski Eye Institute is known for its scientific research and clinical innovation including: creation of the Argus retinal prosthesis implant (also known as the “bionic eye”) for retinitis pigmentosa patients; stem cell therapies for those who have age-related macular degeneration; discovery of the gene that is the cause of the most common eye cancer in children; treatment for eye infections for AIDS patients; inventors of the most widely used glaucoma implant in the world; pioneers of a device for long-term intraocular drug delivery; and the first to use telesurgery to train eye doctors in developing countries. For more information visit: [usceye.org](http://usceye.org).

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