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**USC Roski Eye Institute Joins the ARVO Campaign to Promote the Impact of  
Optical Coherence Tomography, USC Clinician/Scientist one of OCT inventors**

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LOS ANGELES— Celebrating 25 years of the revolutionary impact of optical coherence tomography (OCT) on eye care around the world, the [University of Southern California \(USC\) Roski Eye Institute](#), which helped pioneer OCT, has partnered with the Association for Research in Vision and Ophthalmology ([ARVO](#)) on an OCT education and advocacy campaign.

The ARVO campaign includes a series of [public-friendly videos](#), educational tools and advocacy resources on the discovery and development of OCT, an imaging technology used to visualize the back of the eye (i.e., the retina) without the need for dilation. The short videos feature testimony from patients, clinicians and researchers describing how OCT improves the diagnosis and monitoring of diseases such as glaucoma, macular degeneration, retinopathy of prematurity and diabetic eye disease. There is also an [advocacy toolkit](#) highlighting the real-world impact of OCT on public health, jobs and the economy.

Two USC Roski Eye Institute clinician scientists, [Carmen Puliafito](#), MD, MBA, who is recognized as one of the pioneers of OCT more than 25 years ago, and [Amir Kashani](#), MD, PhD, whose recent research is uncovering a link using OCT for earlier diagnosis and better treatment options for those with diabetic retinopathy, uveitis and retinal vascular occlusion, are featured researchers in the ARVO campaign.

In 1991, after a 10-year collaboration, Puliafito, a world-renowned vitreoretinal surgeon and retinal disease expert, published his creation of OCT along with two MIT researchers, James G. Fujimoto, PhD and Eric Swanson, MS. Then in 2005, Puliafito developed the use of ultra-high speed Fournier domain optical coherence tomography (OCT) to improve glaucoma diagnosis. For his breakthrough creations in OCT Puliafito, along with his fellow researchers, were honored with the 2002 Rank Prize, the world's most prestigious award in optoelectronics. Then in 2012 the team received the prestigious Champalimaud Vision Award in Lisbon, Portugal, recognizing contributions to overall vision research awarded by a distinguished panel of leading international scientists.

“OCT has revolutionized the treatment of eye disease on a global basis and it is now routinely used to make clinical decisions in treating patients with blinding eye diseases,” says Puliafito. “I’ve been honored to be part of the team that created this technology and to know our creation has improved diagnosis and treatment for millions of eye patients around the world.”

Puliafito’s recent research on OCT and diabetic retinopathy is [featured](#) in a special issue of the journal *Investigative Ophthalmology and Visual Science (IOVS)*.

[Watch Dr. Carmen Pulaifito and his collaborators talk about inventing OCT](#)

Kashani, who is pioneering work in regenerative medicine using stem cells to treat age-related macular degeneration, is also leading research into the next generation of OCT imaging methods. His research team at

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## USC Roski Eye Institute Celebrates Its Creation of OCT by Partnering with ARVO on Educational Campaign 2-2-2-2

the USC Roski Eye Institute has recently discovered a breakthrough finding that OCT angiography – the visualization of retinal capillaries – helps measure the earliest changes in retinal capillaries for subjects with diabetic retinopathy. The USC researchers are also showing that OCT-based imaging methods can quantify retinal vascular changes in other retinal diseases such as uveitis and retinal vascular occlusion – critical information that was not previously possible.

“We can detect disease activity earlier and more reliably administer treatments all because of OCT,” says Kashani. “OCT has given us a leg up on patient care because we can more accurately determine what treatments are effective, and therefore we don’t need to perform more invasive procedures.”

[Watch Dr. Amir Kashani talk to Eye Tube Daily about OCT](#)  
[Read Dr. Amir Kashani’s blog about the future of OCT](#)

To date, ARVO estimates that 30 million OCT imaging procedures are performed worldwide every year. The creation of OCT has helped in the early diagnosing of blinding eye diseases for millions across the globe. Beyond eye care, OCT is also showing promise in diagnosing neurodegenerative disorders such as Alzheimer’s and Parkinson’s disease.

“OCT is more than just a ‘miracle’ of modern medicine,” says ARVO President Emily Y. Chew, MD, FARVO. “It took thousands of people a lot of time and money to transform what was a discovery in government-supported research labs into a clinical tool that revolutionized the practice of ophthalmology. These resources we’ve created are designed to highlight the incredible return on taxpayer-funded investment in vision researchers.”

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

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 more than 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 22 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).

### **About ARVO**

The Association for Research in Vision and Ophthalmology (ARVO) is the largest eye and vision research organization in the world. Members include nearly 12,000 eye and vision researchers from over 75 countries. ARVO advances research worldwide into understanding the visual system and preventing, treating and curing its disorders.

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