

**Friday, Nov. 10, 2017**

**USC Roski Eye Institute experts present breakthrough research at AAO 2017**  
*Advances in stem cell–based therapy, biopsy techniques, diabetic retinal detachment repair and more are shared at the annual American Academy of Ophthalmology meeting*

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LOS ANGELES – New discoveries in stem cell–based therapy, biopsy techniques and diabetic retinal detachment repair are among the topics being presented by [USC Roski Eye Institute](#) experts at the American Academy of Ophthalmology (AAO) 2017 annual meeting in New Orleans, Nov. 10-14. From a liquid biopsy for retinoblastoma to a stem cell–based therapy for dry age-related macular degeneration, these advances promise to impact health outcomes for patients along the entire age continuum.

Highlights from the meeting program include:

#### **Aqueous humor liquid biopsy for retinoblastoma**

Unlike most cancers that are diagnosed using a biopsy, retinoblastoma tumors cannot be directly biopsied. On Nov. 12, [Jesse Berry, MD](#), ocular oncologist at the Vision Center at Children’s Hospital Los Angeles (CHLA) and Keck School of Medicine faculty, presents a proof of concept [study](#) published in JAMA Ophthalmology on Oct. 12, 2017, for aqueous humor as a surrogate tumor biopsy for retinoblastoma — a safe and effective way to derive genetic information from the tumor without removing the eye.

#### **Stem cell–based therapy for dry age-related macular degeneration**

On Nov. 11, [Amir Kashani, MD, PhD](#) discusses developments in stem cell therapies for age-related macular degeneration, including a novel subretinal implantation of a stem cell–based bioengineered scaffold for dry age-related macular degeneration.

Experts will also share the following research at the USC Roski Eye Institute booth at the meeting ([booth #4356 schedule](#)):

#### **Stem cell–derived retinal organoid imaging**

Stem cell–derived retinal organoids and enhanced imaging technologies provide an opportunity to assess retinal development and disease models. On Nov. 12, [Scott Fraser, PhD](#) presents results from a [study](#) published in Investigative Ophthalmology

& Visual Science in July 2017 that used phase contrast microscopy, optical coherence tomography, fluorescence lifetime imaging microscopy and hyperspectral imaging to detect changes in organoid metabolic activity.

### **Surgical equipment and diabetic retinal detachment outcomes**

Diabetic retinal detachments are one of the most common causes of blindness for patients with diabetes. On Nov. 13, [Hossein Ameri, MD, PhD](#) discusses three types of surgical systems used in retinal detachment repair and how they influence visual and anatomical outcomes in diabetic retinal detachment. Ameri presents research from the largest report of its kind, a five-year [study](#) published in *Retina* on Aug. 8, 2017, about the impact of using a 20-gauge, 23-gauge and 25-gauge vitrectomy system for diabetic retinal detachment repair.

### **Biomechanical changes after LASIK flap creation combined with rapid cross-linking**

A new data point has been added to the literature on the impact of combined prophylactic corneal cross-linking and LASIK flap creation. On Nov. 11, [J. Bradley Randleman, MD](#) and [Farhad Hafezi, MD, PhD](#) present a [study](#) published in the *Journal of Refractive Surgery* on June 6, 2017, that demonstrated a lack of corneal biomechanical impact using the Brillouin microscopy method.

Additional topics being presented at the USC Roski Eye Institute booth include:

- Aqueous humor liquid biopsy for retinoblastoma, by [Jesse Berry, MD](#) on Nov 11.
- Tear film protein profiles and biomarkers for the diagnosis of dry eye and Sjögren's syndrome, by [Sarah Hamm-Alvarez, PhD](#) and [J. Martin Heur, MD, PhD](#) on Nov. 12.
- An international telemedicine program for retinopathy of prematurity, by [Thomas Lee, MD](#), director of the Vision Center at CHLA and interim chair of the department of ophthalmology for the Keck School of Medicine, on Nov. 12.
- Ruling in or ruling out infectious etiologies in uveitis, by [Narsing Rao, MD](#) on Nov. 13.

For more information about USC Roski Institute presentations at AAO 2017, visit <http://eye.keckmedicine.org/aa0-2017-sneak-peek/>.

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### **[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. Ranked No. 2 in National Eye Institute (NEI) research grants for academically based ophthalmology departments and nationally

ranked in *U.S. News & World Report's* annual "Best Hospitals" issue for more than 24 years, the USC Roski Eye Institute is headquartered in Los Angeles with clinics in Arcadia, Beverly Hills and Pasadena. Faculty physicians are also the exclusive ophthalmic doctors affiliated with Los Angeles County + USC Medical Center (LAC+USC) and Children's Hospital Los Angeles (CHLA).

For more information, go to [eye.keckmedicine.org](http://eye.keckmedicine.org).