Vision Research Seminar Series

Organized by Cullen Eye Institute and Department of Ophthalmology, Baylor College of Medicine

Sponsored by Retinal Research Foundation

The Vision Club Seminar Series provides a platform to connect vision research investigators and clinicians for scientific discussion and research collaboration. The seminar series attracts vision research scientists from the Texas Medical Center as well as in the United States and around the world. The goal of this platform is to develop a rich academic environment, cultivate new scientific ideas and advance the frontier of vision research. Our monthly events are open to all members of vision research community and are generally held at 3 – 4 p.m. (unless otherwise specified) on the second Tuesday of every month.

Seminar Zoom Link

Or in-person at Cullen Eye Institute Auditorium, NC202, 6565 Fannin St. Houston

Contact Debalina for any questions.

Seminar Speakers 2025

May 15, 2025: Chi Hwan Lee, Ph.D.

Seminar Title: Smart Contact Lenses and Beyond: Translational Wearable Technologies for Chronic Disease Management

Time: 3 p.m. via Zoom and in-person

Speaker Bio

Dr. Chi Hwan Lee is a Fellow of the American Institute for Medical and Biological Engineering (AIMBE) and the Lesli A. Geddes Professor of Biomedical Engineering and Mechanical Engineering, and by Courtesy, of Materials Engineering, Electrical and Computer Engineering, and Speech, Language, and Hearing Sciences at Purdue University. He obtained his M.S. and Ph.D. degrees in Mechanical Engineering from Stanford University in 2009 and 2013, respectively. His research focuses on developing wearable devices to address unmet clinical needs and translate them into measurable clinical impacts. For his notable contributions, Dr. Lee has been honored with prestigious awards such as the 2025 Purdue CoE Faculty Research Award, 2021 Sensors Young Investigator Award, 2020 Purdue CoE Early Career Research Award, 2019 NIH Trailblazer Award, and 2019 Korean-American Scientists and Engineers Association (KSEA) Young Investigator Award. He has published over 90 journal papers and 6 book chapters, and issued 11 U.S. patents, filed > 15 utility patents, and co-founded 4 startup companies.

Seminar Summary

My laboratory at Purdue University focuses on bridging the gap between engineering and unmet clinical needs through innovations in wearable technologies. We develop novel yet simple flexible micro-transducers with a clear translational pathway to clinical impact. Our research explores wearable biomedical devices that safely attach to the skin or eye, enabling continuous, remote monitoring of health and chronic diseases with applications in healthcare, rehabilitation, and telemedicine. In this talk, I will present: (1) Sticktronics—sticker-like thin-film electronics attachable to curved surfaces for broader industrial and healthcare use; (2) sensory skin patches designed for urgent clinical needs in telemedicine; (3) smart contact lenses, built on commercial soft lenses, for continuous monitoring of chronic ocular diseases such as glaucoma; and (4) flexible, biodegradable patches embedded with injectable silicon nanoneedles for painless, sustained ocular drug delivery. I will share experimental and theoretical insights across these platforms.