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Image created in Edmonton, Alberta

Real Virtuality

Semi-finalist

Imagine a life with unexpected deterioration of vision leading to complete blindness. Surprisingly, 1 in 20 people in North America lose their ability to see clearly around 40 years of age due to a genetic blinding disease called Fuchs' dystrophy. The disease affects the outermost layer of the eye, the cornea. Patients experience hazy vision that progresses to painful blinding symptoms. With poor understanding of the disease, the only available treatment option is corneal transplantation. Approximately 23% of the corneal transplants performed in United States in 2016 were due to Fuchs' dystrophy.

The picture depicts the despair of patients who are losing their sight and taking a step towards darkness every day; people who could enjoy beauty of nature but are now blindfolded into darkness for rest of their lives. My work focuses on gaining a better understanding of the disease pathophysiology through biochemical approaches using cellular model systems. In past two years, I have filled the gap of knowledge leading to a clearer understanding of the disease. I am now using that knowledge to design potential therapeutic strategies to help patients see again and delay/overcome the need for corneal transplantation because vision is crucial for quality of life and quality of life is more important than life itself.