UT professor's gene editing research wins 2025 Edith and Peter O'Donnell Award

Madison West , General Life&Arts Reporter

As a kid, Ilya Finkelstein always wanted to be a scientist. Curious about the natural world, he found himself outside, collecting butterflies and cataloging them. He enjoyed seeing how everything worked in the world.

This month, the now associate professor at UT received the 2025 Edith and Peter O'Donnell Award from the Texas Academy of Medicine, Engineering, Science & Technology during their annual conference. The award recognized his groundbreaking research on clustered regularly interspaced short palindromic repeats, known as CRISPR, biology and genome editing.

Around the same time he began his postdoctoral training at Columbia University Medical Center in 2010, scientists published a higher-resolution recombination map of the human genome initially decoded in 2003. Finkelstein said this development was like the moon landing for biology and for all of mankind. This revolutionary discovery in science shaped Finkelstein's research, particularly with CRISPR.

Courtesy of Keiko Torii

Ilya Finkelstein with Keiko Torii at the Texas Academy of Medicine, Engineering, Science & Technology (TAMEST) annual conference.

"Now we can edit the genome," Finkelstein said. "Never in the history of life on Earth has a species been able to control its own genetic state. That's pretty heavy words if you think about it. Reducing it to practice is where I thought it would be so exciting to work, to dedicate my team's effort and my effort too."

At UT, Finkelstein continues to explore genome editing's potential to repair DNA and cure diseases. Keiko Torii, a professor in the Department of Molecular Biosciences and fellow TAMEST member, said Finkelstein's focus makes him stand out in the competitive field of genome editing.

“(Genome editing) is an extremely hot topic, and thousands of scientists are doing it,” Torii said. “What sets Ilya apart is his use of expertise, different techniques and … unique point of view.”

As a colleague, Torii also appreciates Finkelstein’s balance between rigor and creativity.

“He is an interesting mixture … (who) comes across as a very formal, courteous and vigorous scientist,” Torii said. “At the same time, he’s imaginative and has a good, sometimes sarcastic sense of humor, he’s great.”

Biology junior Daphne Sahaya works as an undergraduate student in Finkelstein’s research lab. As her principal investigator, Finkelstein provides Sahaya with valuable experiences.

“He pushes all of us and challenges us,” Sahaya said. “Research is such an iterative process … and I’ve learned so much in the two or three years I’ve worked here. It’s been the greatest opportunity.”

Beyond receiving the award, Finkelstein said it’s a privilege to be curious and open-minded. He said that more than an award recipient, he sees himself as a team member and figurehead for the research being done.

“I don’t want my research projects to be ‘short-termism,’” Finkelstein said. “We should be thinking about ‘What’s the five-year plan? What can this do in five, ten years for society, for humanity, for biology?’”