

How the New Head of Fred Hutch's Biostatistics Program Applies Data to Cancer Research

Jingyi Jessica Li named Donald and Janet K. Guthrie Endowed Chair in Statistics.

October 16, 2025 By Fred Hutch News Service and Laura Isaza

For [Jingyi Jessica Li, PhD](#), the completion of the Human Genome Project in 2003 felt like opening a door to a universe of data that could transform human health. Still in high school, she felt excited about how scientists might use this data to answer fundamental questions.

The milestone inspired Li's undergraduate studies in biology, where she realized that quantitative analysis could unlock answers in that data. Statistics, she thought, was the key.

After earning her PhD in biostatistics at the University of California, Berkeley, she joined the faculty at the University of California, Los Angeles. Her research focused on improving statistical models to analyze “noisy” data (when there are so many data points that it's unclear which are truly meaningful) to find patterns in how genes are turned on and off. She quickly became a leader in her field and has received numerous honors; most recently, the 2025 Mortimer Spiegelman Award, given annually to a statistician under 40 for outstanding contributions to health statistics.

When Fred Hutch Cancer Center offered Li a biostatistics leadership role, with the honor and support of an endowed chair, she saw it as an opportunity to apply her expertise directly to research with impacts on patient care — something she felt was hard to come by in a purely academic setting. Plus, the flexible funding provided by the endowed chair would allow her to pursue novel research.

Joining a leading biostatistics organization in Seattle, a city at the helm of innovation in technology and data science, Li once again felt the sense of possibility she'd felt back in 2003. She is excited to use biostatistics in collaboration with scientists at Fred Hutch and beyond to continue working toward cures and improved care for patients with cancer and infectious disease.

Fred Hutch welcomes new Biostatistics leader

This summer, Li joined Fred Hutch as the head of the [Biostatistics Program](#) and inaugural holder of the Donald and Janet K. Guthrie Endowed Chair in Statistics. She is also an affiliate professor of Biostatistics at the University of Washington.

The endowed chair Li holds was inspired by a conviction that statistics has the potential to transform lives.

Don Guthrie, a long-time Fred Hutch supporter, established it in honor of his father, Donald Guthrie, a statistician who believed in the power of applied statistics to expand our understanding of the world. Like Li, he was also on the faculty at UCLA, where he taught for three decades.

“We are fortunate to have Dr. Li as an advocate for the use of applied statistics across Fred Hutch,” said Fred Hutch President and Director Thomas J. Lynch, Jr., MD, holder of the Raisbeck Endowed Chair. “And as biological research becomes increasingly data-intensive, this endowed chair from Don builds momentum for the role of statistics in unlocking future cancer and infectious disease breakthroughs.”

Why statistical models matter

As evolving biotechnologies expand capacity for data collection, statistics is critical for shaping research questions, designing experiments and deriving meaningful insights. Through applied statistics, scientists can better understand the results of their experiments to make more precise conclusions. In turn, these conclusions can drive new innovations in cancer and infectious disease treatments.

Recently, Li developed a new data analysis framework for single-cell transcriptomics, the study of the RNA molecules that determine a cell’s protein production. Transcriptomics, which typically involves tens of thousands of data points, can help researchers assess a variety of biological phenomena, including the effectiveness of a cancer treatment.

In transcriptomic analysis, researchers often perform multiple computational operations on the same dataset, a practice known as “double dipping.” Examining this practice, Li found that early manipulations can skew downstream results. Her team at UCLA designed a framework to improve accuracy in transcriptomic data analysis — which she hopes scientists will use in their biological research.

Joining Fred Hutch, she’s tapping into a network to which she knows biologists are paying attention. The Biostatistics Program, within the Public Health Sciences Division, emphasizes collaboration within the center and beyond, and Fred Hutch is home to the statistical coordinating center for several national research networks, including the [Cancer Screening Research Network](#), the [HIV Vaccine Trials Network](#) (SCHARP), and the [Women’s Health Initiative](#).

From helping shape computing and machine learning models for disease prediction and treatment response to evaluating diagnostic tools for disease, the Biostatistics Program plugs directly into critical research happening across the country.

“I won’t need to wait for people to discover my methods by reading my papers,” Li said. “I can be my own methods-user and collaborate with people to help solve analysis problems.”

A legacy of applied statistics

Don Guthrie’s involvement with Fred Hutch spans nearly three decades, starting with a \$20 donation in 1996. He’d spent the previous year undergoing treatment for Hodgkin lymphoma and noticed his doctors paid close attention to research coming out of Fred Hutch. Once in remission, he told himself, “I should be doing something to support cancer research.”

When his father died of bladder cancer in 2022 at age 89, Guthrie wanted to honor his legacy of curiosity and commitment to scientific progress.

Fred Hutch currently has more than [50 endowed chairs](#), which provide sustained, flexible support and promote forward-looking research. At Fred Hutch, donors can choose to endow a chair for a faculty member with a gift of \$2 million or more. These endowments are a cornerstone of the [Campaign for Fred Hutch](#), which is bringing together the community to raise \$3 billion to radically increase the pace and scale of innovation.

This endowed chair is one of up to 25 that will be supported by matching funds from the Anniversary Challenge, meaning Guthrie got a dollar-for-dollar match on a \$1 million donation to endow the chair.

He made an additional contribution for the application of statistics in immunotherapy and precision oncology to build on the important role biostatistics has played in decades of discoveries in cancer and infectious disease research.

Cancer has impacted several members of his family. His grandfather had lung cancer, a “war wound” from picking up smoking in the trenches during World War I. Last year, his son was diagnosed with non-Hodgkin lymphoma.

Guthrie has seen research transform outlooks for patients with non-Hodgkin lymphoma. “When I had cancer, non-Hodgkin lymphoma was really serious. Rituximab has changed the game.”

Since the drug’s FDA approval in 1997 as the first antibody-based cancer drug, outcomes for people diagnosed with non-Hodgkin lymphoma have improved significantly. (One of Fred Hutch’s clinical researchers, [David G. Maloney, MD, PhD](#), now professor emeritus at Fred Hutch and UW Medicine, was instrumental in developing and testing rituximab.)

For Guthrie’s son, rituximab was also part of a treatment plan resulting in remission.

“Other than my son ending up with my haircut for a few months,” he said, pointing to a shaved head, “he came out of it relatively smoothly.”

Guthrie wants to see a world with more stories like that, where the discovery of effective treatments changes what it means to receive a diagnosis for a particular type of cancer or disease. He believes that applied statistics and a community committed to innovative research and compassionate care will play a central role in creating that future.

Laura Isaza is a writer on the Philanthropy team at Fred Hutch Cancer Center with a background in narrative and audio journalism. Her work has appeared in various outlets, including The Seattle Times, NPR’s All Things Considered, and KALW.

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