Jianwen Que began his career as a psychiatrist in Beijing, China, but after two years of treating patients, he started to wonder if there was more to medicine than this. He returned to school, taking on the grueling science program at the University of Singapore, and then took a position in the laboratory of Dr. Brigid Hogan, the internationally recognized developmental biologist.

Dr. Hogan’s work involved the use of stem cells to generate new lung tissue. New areas of science opened before Dr. Que, and he decided to explore a largely uninvestigated area of the body: the esophagus.

Dr. Que wrote a grant application for the highly competitive National Institute of Health’s (NIH) K99 Pathway to Independence Award. He proposed an experiment in which he would make mutations in healthy stem cells in mice, and see if they would create cancer in the esophagus. If the cells would create a malignancy, it could be possible to correct this specific mutation in the stem cells to cure esophageal cancer.

The NIH awarded Dr. Que the grant, and he came to the University of Rochester Medical Center to perform his experiments. So far, he has seen significant success in working with mutated stem cells. “It turns out that mutations in stem cells can make a tumor,” he said, “and this mutation in the esophagus can give rise to cancer. Maybe we can correct these stem cell mutations and bring the cells back to normal.”

Dr. Que is beginning to work with molecules that may inhibit the mutation of these stem cells. His research could lead to a cure for human beings stricken with esophageal cancer—and, eventually, to preventative measures that will eradicate the cancer altogether. “If you can target the stem cells that are cancer cells, you can get rid of that cancer,” he said.