
COVID Vaccine Pioneers and Others Win 2021 Lasker Awards in Medicine

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The Lasker awards for 2021, announced Friday, were given to scientists whose work was crucial for Covid-19 vaccines, scientists who discovered how to control the firing of neurons with beams of light, and to a researcher whose influential work and leadership changed medical science.

The prizes are named for Mary and Alfred Lasker. Ms. Lasker was an advocate for medical research, and her husband is sometimes referred to as the father of modern advertising. They are among the most prestigious prizes in medicine, and scores of Lasker winners have gone on to receive the Nobel Prize. Recipients in each category share a \$250,000 prize. The prizes were not awarded in 2020 because of the coronavirus pandemic.

A crucial advance that led to Covid vaccines.

Katalin Kariko, a senior vice president at [BioNTech](#), and Dr. Drew Weissman, a professor in vaccine research at the [University of Pennsylvania's Perelman School of Medicine](#), shared this year's Lasker-DeBakey Clinical Medical Research Award.

In retrospect, their 2005 breakthrough was apparent when Dr. Kariko and Dr. Weissman proudly published a surprising finding they had made about messenger RNA, also known as mRNA, which provides instructions to cells to make proteins. The scientists noticed that when they added mRNA to cells, the cells instantly destroyed it. But they could prevent that destruction by slightly modifying the mRNA. When they added the altered mRNA to cells, it could briefly prompt cells to make any protein they chose.

But at the time most scientists were uninterested in the technology, which was to become a keystone of mRNA vaccines, because they thought there were better ways to immunize.

Their paper, published in [Immunity](#) in 2005 after multiple rejections by other journals, got

little attention. The discovery seemed esoteric.

Dr. Weissman and Dr. Kariko wrote grants to continue their work. Their applications were rejected. Eventually, two biotech companies took notice of the work: Moderna, in the [United States](#), and BioNTech, in [Germany](#). The companies studied the use of mRNA vaccines for flu, cytomegalovirus and other illnesses, but none moved out of clinical trials for years.

Then the coronavirus emerged. The strikingly effective vaccines made by Moderna and Pfizer-BioNTech use the modification Dr. Kariko and Dr. Weissman discovered.

The two scientists are now being showered with rewards for their discovery, including the \$3 million Breakthrough Prize and the \$1 million Albany Prize.

Dr. Kariko said in an interview this week that, for her, the greatest reward is having played a part in developing a vaccine that saved so many lives.

“For me it is enough to know that I contributed, to know that so many people were helped,” she said.

Dr. Weissman stressed in an interview this week that although he and Dr. Kariko are being honored, the work leading up to the mRNA vaccines involved more than just modifying mRNA.

“People should know that this wasn’t just a one-off experiment that we did and the vaccine was made in 10 months,” he said. “We did the modified mRNA and we are getting the honors, but the vaccines are based on 20-plus years of work by Kati and I and work by hundreds if not thousands of other scientists.”

Read the [original article](#) on The New York Times.