



FROM:

**Lasker Foundation**  
New York, NY  
[www.laskerfoundation.org](http://www.laskerfoundation.org)

CONTACT:

**Rubenstein Communications, Inc.**  
Eric M. Gewirtz [egewirtz@rubenstein.com](mailto:egewirtz@rubenstein.com) +1-212-843-8290  
Janet Wootten [jwootten@rubenstein.com](mailto:jwootten@rubenstein.com) +1-212-843-8024

## **LASKER FOUNDATION ANNOUNCES 2021 LASKER AWARDS**

### **The 2021 Albert Lasker Basic Medical Research Award**

***Dieter Oesterhelt, Peter Hegemann, and Karl Deisseroth** for the discovery of light-sensitive microbial proteins that can activate or silence individual brain cells and for their use in developing optogenetics—a revolutionary technique for neuroscience*

### **The 2021 Lasker~DeBakey Clinical Medical Research Award**

***Katalin Karikó and Drew Weissman** for the discovery of a new therapeutic technology based on the modification of messenger RNA—enabling rapid development of the highly-effective COVID-19 vaccines*

### **The 2021 Lasker~Koshland Special Achievement Award in Medical Science**

***David Baltimore**, one of the premier biomedical scientists of the last five decades, renowned for the breadth and beauty of his discoveries in virology, immunology, and cancer; for his academic leadership; for his mentorship of prominent scientists; and for his influence as a public advocate for science*

(New York, September 24, 2021) The [Lasker Foundation](http://www.laskerfoundation.org) today announced the winners of its 2021 Lasker Awards: **Dieter Oesterhelt** (Max Planck Institute of Biochemistry), **Peter Hegemann** (Humboldt University of Berlin) and **Karl Deisseroth** (Stanford University) will receive the Albert Lasker Basic Medical Research Award; **Katalin Karikó** (BioNTech) and **Drew Weissman** (University of Pennsylvania) will be honored with the Lasker~DeBakey Clinical Medical Research Award; and **David Baltimore** (California Institute of Technology) will receive the Lasker~Koshland Special Achievement Award in Medical Science.

Widely regarded as America's top biomedical research prize, the Lasker Awards carry an honorarium of \$250,000 for each category. Due to the pandemic, the Foundation will not be presenting the Awards this year in a traditional in-person ceremony. Instead, a virtual awards announcement is viewable at [laskerfoundation.org](http://www.laskerfoundation.org).

### **The 2021 Albert Lasker Basic Medical Research Award**

The 2021 Lasker Basic Medical Research Award honors three scientists for the discovery of light-sensitive microbial opsins and for harnessing their properties to develop a technology

that enables researchers to control brain-cell activity by using light beams to trigger ion flow into and out of neurons.

The work of **Dieter Oesterhelt**, **Peter Hegemann**, and **Karl Deisseroth** has advanced technologies for probing brain function and opened pathways for the better understanding of neurodegenerative disease and mental illnesses.

Scientists can now study neurons and their circuitry with stunning clarity and probe their functional underpinnings with unprecedented resolution. Hundreds of laboratories around the world are applying optogenetics to tease apart adaptive and maladaptive behaviors, such as hunger, thirst, anxiety, and parenting.

>> [Read the full citation](#)

### **The 2021 Lasker~DeBakey Clinical Medical Research Award**

The 2021 Lasker~DeBakey Clinical Medical Research Award honors **Katalin Karikó** and **Drew Weissman** for developing a method to turn cells into factories that can temporarily produce proteins that serve as therapeutic compounds or stimulate the body's immune system to attack a specific pathogen.

Weissman and Karikó discovered how to modify messenger RNA (mRNA) in a way that boosts protein production while minimizing harmful inflammatory responses. In doing so, they launched a novel therapeutic technology—one that has been used to make Covid-19 vaccines in record time and that are 95% effective in preventing illness from the original viral variant. To date, hundreds of millions of people throughout the world have received mRNA vaccines, which have proved to be remarkably safe.

Building on Karikó and Weissman's breakthrough in RNA therapeutics, researchers are now developing modified mRNA therapies for a plethora of illnesses, including cancers, infectious diseases, and autoimmune disorders.

>> [Read the full citation](#)

### **The 2021 Lasker~Koshland Special Achievement Award in Medical Science**

The 2021 Lasker~Koshland Special Achievement Award in Medical Science honors **David Baltimore**. Baltimore is renowned for his breakthrough discoveries on retroviruses, the role of NF- $\kappa$ B in inflammation, and RAG recombinase proteins, which maintain antibody diversity. His cancer research on the Abelson leukemia virus led to key insights into chronic myelogenous leukemia.

Over the course of his 60-year career, Baltimore was founding director of MIT's Whitehead Institute for Biomedical Research and later served as president of Rockefeller University and the California Institute of Technology. He participated in the NIH's Recombinant-DNA Advisory Committee in the 1970s and 1980s, co-chaired a commission that helped shape America's response to HIV/AIDS in the 1980s, and more recently, led summits exploring the benefits and risks of CRISPR gene-editing technology.

A brilliant investigator, mentor, institutional leader, and shaper of public policy, Baltimore will shine as a model in science for generations to come.

>> [Read the full citation](#)

**About the Lasker Foundation:** The Lasker Foundation seeks to increase support for biomedical research by celebrating the power of biomedical science to save and improve human lives. Through its internationally renowned Lasker Awards, educational initiatives, and public advocacy, the Foundation recognizes the most important achievements in science and public service, supports and encourages the scientific leaders of tomorrow, and raises awareness of the ever-present need for research funding. Established in 1942 by Albert and Mary Lasker, the Foundation is committed to inspiring robust and sustained support for biomedical research, fueled by Mary Lasker's call to action: "If you think research is expensive, try disease!" More information at [laskerfoundation.org](http://laskerfoundation.org).

**About the Lasker Awards:** For 75 years, the Lasker Awards, America's most prestigious biomedical research awards, have recognized the contributions of leaders who made major advances in the understanding, diagnosis, treatment, cure, or prevention of human disease. Recipients of the Lasker Medical Research Awards are selected by a distinguished international jury chaired by Joseph L. Goldstein, recipient of the 1985 Lasker Award for Basic Medical Research and the Nobel Prize in Physiology or Medicine. Ninety-five Lasker laureates have also received the Nobel Prize, including six in the last two years. More details on the Lasker Award recipients, the full citations for each award category, video interviews and photos of the awardees, and additional information on the Foundation are available at [www.laskerfoundation.org](http://www.laskerfoundation.org). Follow the Awards on [Twitter](#).

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