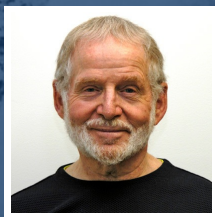


# Established the Modern Field of Membrane Transport



Ronald Kaback

Distinguished Professor, Physiology, Microbiology, Immunology, & Molecular Genetics

## CURRENT RESEARCH

Fundamental research leads to important insight into an important biological process

The cell or cytoplasmic membrane separates the interior of the cell from the outside environment. One of its most important features is that it is selectively permeable, meaning that the membrane only allows certain molecules to enter the cell while denying others. The membrane transport proteins that catalyze such movement, which also frequently drive accumulation against a concentration gradient (i.e., active transport) have been a focus for molecular biologists for nearly 50 years. Dr. Ronald Kaback, a Distinguished Professor at the University of California, Los Angeles and a member of the National Academy of Science, is a world-renowned leader who pioneered the modern field of membrane transport. His early studies on active transport and bioenergetics in right-side-out (RSO) membrane vesicles from bacteria, using *Escherichia coli* primarily as the paradigm, revolutionized membrane transport. Dr. Kaback then devoted his career to developing insight into the mechanisms of membrane transport and has remained at the forefront of the field for 45 years. His work with membrane proteins is likely to have a profound effect on health and disease due to the relationship between membrane transport processes and human physiology. At least two of the most widely prescribed drugs in the world, SSRIs and gastric proton pump inhibitors, which are prescribed respectively for depression and certain intestinal disorders, are targeted to membrane transport proteins.

From the initial discovery that RSO vesicles are a well defined system for the study of transport and other functions to the development of probes for quantifying membrane potentials and pH gradients in microscopic systems to site-directed mutagenesis and cysteine...

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## AFFILIATION



University of California, Los Angeles

## EDUCATION

- B.S. 1958 , Haverford College
- M.D., 1962 , Albert Einstein College of Medicine
- Intern, 1963 , Bronx Muni Hospital Center

## AWARDS

- Recipient of Third Annual Lewis Rosenstiel Award, Brandeis University, 1974
- Elected Member, National Academy of Sciences, 1987
- Kenneth Cole Award, American Biophysical Society, 1988
- 3M Life Sciences Award, 1993
- Peter Mitchell Medal, 2012

## RESEARCH AREAS

Health & Wellness, Longevity, Immortality Research

## FUNDING REQUEST

Your contributions will support the continued research of Dr. Ronald Kaback, of the University of California, Los Angeles, as he continues to expose detailed mechanisms of membrane transport proteins. Donations will support the necessary \$800K required each year for personnel and lab equipment. In choosing to donate, you will play a role in understanding the fundamental mechanisms of membrane transport in order to understand a process vital to life and to develop effective therapeutics and antibiotics.