



ELAINE SANDERS-BUSH LECTURE SERIES

ERIC R. KANDEL, M.D.

THE BIOLOGY OF MEMORY AND AGE RELATED MEMORY LOSS

MAY 4, 2017
4:00 P.M.
208 LIGHT HALL

SPONSORED BY:
THE DEPARTMENT OF PHARMACOLOGY



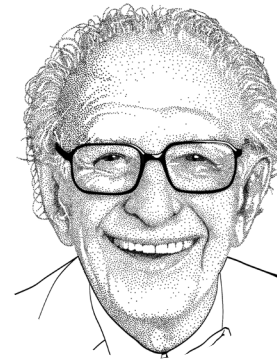
Upcoming Discovery Lecture:

Lectures will resume in September.

VANDERBILT  UNIVERSITY
MEDICAL CENTER

THE BIOLOGY OF MEMORY AND AGE RELATED MEMORY LOSS

I will consider the neural systems and molecular mechanisms that contribute to learning and long-term memory. I will divide my talk into two parts: First, I will consider how different memory systems were identified in the human brain and how they were shown to be involved in two major forms of neural memory storage: 1) simple memory for perceptual and motor skills and 2) complex memory for facts and events. I will then go on to outline studies that demonstrated that long-term memory is reflected in the growth of new synaptic connections. Finally, I will discuss how our insights into memory storage are allowing us to understand the two major forms of age related memory loss.



ERIC R. KANDEL, M.D.

**UNIVERSITY PROFESSOR AND FRED KAVLI
PROFESSOR, DEPARTMENT OF NEUROSCIENCE
COLUMBIA UNIVERSITY**

**DIRECTOR OF THE KAVLI INSTITUTE FOR
BRAIN SCIENCE**

**CO-DIRECTOR OF THE MORTIMER B. ZUCKERMAN
MIND BRAIN BEHAVIOR INSTITUTE**

INVESTIGATOR, HHMI

MEMBER, NATIONAL ACADEMY OF SCIENCES

NOBEL PRIZE FOR PHYSIOLOGY OR MEDICINE IN 2000

Eric R. Kandel, M.D., is University Professor at Columbia University; Kavli Professor and Director, Kavli Institute for Brain Science; Co-Director, Mortimer B. Zuckerman Mind Brain Behavior Institute; and an Investigator at the Howard Hughes Medical Institute. A graduate of Harvard College and N.Y.U. School of Medicine, Kandel trained in Neurobiology at the NIH and in Psychiatry at Harvard Medical School. He joined the faculty of the College of Physicians and Surgeons at Columbia University in 1974 as the founding director of the Center for Neurobiology and Behavior. At Columbia Kandel organized the neuroscience curriculum. He is an editor of Principles of Neural Science, the standard textbook in the field now in its 5th edition. In 2006, Kandel wrote a book on the brain for the general public entitled *In Search of Memory: The Emergence of a New Science of Mind*, which won both the L.A. Times and U.S. National Academy of Science Awards for best book in Science and Technology in 2008. A documentary film based on that book is also entitled *In Search of Memory*. In 2012 Kandel wrote *The Age of Insight: The Quest to Understand the Unconscious in Art, Mind, and Brain, from Vienna 1900 to the Present*, which won the Kreisky Award in Literature, Austria's highest literary award. Kandel's new book entitled, *Reductionism in Art and Brain Science: Bridging the Two Cultures*, published by Columbia University Press has just been released.

Kandel's research has been concerned with the molecular mechanisms of memory storage in *Aplysia* and mice. More recently, he has studied animal models in mice, age related memory disorders, post-traumatic stress disorders, nicotine, alcohol, marijuana and cocaine addiction.

Kandel has received twenty-three honorary degrees, is a member of the U.S. National Academy of Sciences as well as being a Foreign Member of the Royal Society of London and a member of the National Science Academies of Austria, France, Germany and Greece. He has been recognized with the Albert Lasker Award, the Heineken Award of the Netherlands, the Gairdner Award of Canada, the Harvey Prize and the Wolf Prize of Israel, the National Medal of Science USA and the Nobel Prize for Physiology or Medicine in 2000.

ELAINE SANDERS-BUSH LECTURE SERIES

Dr. Elaine Sanders-Bush was a leader in the development of neuroscience research and graduate education at Vanderbilt. In 1997, she spearheaded the creation of a new Ph.D. graduate program in Neuroscience and served as Director of that program until 2008. During this decade, the program grew to more than sixty graduate students, an amazing feat. In 2002, she was the Founding Director of the Vanderbilt Brain Institute and made an academic home for the first non-departmental Ph.D. training program in neuroscience at Vanderbilt. In recognition of her impact in graduate education at Vanderbilt, the Elaine Sanders-Bush Award for Mentoring Graduate and/or Medical Students in the Research Setting was created in 2006. Dr. Sanders-Bush has a deep personal commitment to enhancing opportunities for minority trainees and has worked to enhance minority training programs at Tennessee State University, Meharry Medical College and Vanderbilt. In recognition of her commitment and accomplishments, she was the first recipient of Vanderbilt's Levi Watkins, Jr. Award for Leadership in Diversity in 2002 and, in 2009, the Delores Shockley Partnership Award. In 2010, the Elaine Sanders-Bush Lecture Series was established in recognition of her many contributions.