THE IRWIN ESKIND LECTURE IN BIOMEDICAL SCIENCE

Dr. Irwin Eskind, a native of Nashville, Tennessee, was a supporter of Vanderbilt University, the School of Medicine and the Medical Center for more than four decades. A clinical professor of medicine at Vanderbilt, he was also a 1945 graduate of the College of Arts and Science and a 1948 graduate of the School of Medicine. He received his residency training in internal medicine at Boston City Hospital from 1948 to 1951 and completed his training at Vanderbilt in 1951. He served in the U.S. Army Medical Corp. from 1951 to 1953 and was a fellow in gastroenterology at the Lahey Clinic in Boston from 1953 to 1954. Dr. Eskind established his clinical practice in internal medicine in Nashville in 1954.

Working on the medical staffs of Vanderbilt University Medical Center and Saint Thomas Hospital, he not only supported the clinical teaching programs directed at medical students and residents, but devoted enormous personal effort to enhancing the resources of the university and the Medical Center. He served as president of the Canby Robinson Society where he was a life member.

Dr. Eskind was also a strong supporter of the School of Medicine, School of Nursing, Blair School of Music, Vanderbilt Institute for Public Policy Studies and the university as a whole. He was a member of Friends of Blair, Friends of the Library and the Julia Hereford Society. Dr. Eskind served on the Vanderbilt University Board of Trust where he was a member of its executive budget and hospital committees. He was on the executive committee of the Campaign for Vanderbilt.

The Eskind Biomedical Library and the Vanderbilt Eskind Diabetes Clinic reflect the Eskind family's remarkable commitment to Vanderbilt.

He also served as president of the Middle Tennessee Diabetes Association and The Temple Congregation Ohabai Sholom. He was on the boards of the WPLN Foundation, the Nashville Jewish Federation and the Jewish Philanthropic Fund. Dr. Eskind was the recipient of the Humanitarian Award of the Middle Tennessee Community Foundation and was honored as Person of the Year by the Nashville Council on Community Justice.

The late Dr. Eskind and his wife of more than 50 years, Annette, raised two sons, Jeffrey and Steven, who are both physicians in Nashville. Dr. Steven Eskind is a member of the Vanderbilt faculty in the Section of Surgical Sciences. Dr. Jeffrey Eskind is a member of medical staff at Saint Thomas Hospital.

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OF MOLECULAR PHYSIOLOGY & BIOPHYSICS

C. RONALD KAHN, M.D

INSULIN, DIABETES, AND THE CONTROL OF BRAIN METABOLISM

FEBRUARY 21, 2013
4:00 P.M.
208 LIGHT HALL

IRWIN ESKIND LECTURE
IN BIOMEDICAL SCIENCE

VANDERBILT UNIVERSITY
MEDICAL CENTER

Diabetes mellitus is a multifactorial disease due to deficient insulin secretion and/or action, resulting in hyperglycemia, alterations in lipid metabolism and a variety of complications in tissues throughout the body. These complications extend to the central nervous system (CNS), including cognitive dysfunction and behavioral changes, and are observed both in type 1 and type 2 diabetes. Studies have shown altered information processing, psychomotor efficiency, attention, and mental flexibility in type 1 diabetes, whereas type 2 diabetes more often affects memory, psychomotor speed, and executive function. We have shown that mice with genetic inactivation of the insulin receptor in brain have multiple metabolic abnormalities, including mild obesity due to increased food intake, increased hepatic glucose output, and hypothalamic hypogonadism. As these mice age, they also develop abnormalities in neuronal function leading to behavioral changes. Part of this may be due to changes in brain cholesterol metabolism. The brain is the most cholesterol rich organ in the body, containing more than 20% of the sterol pool and almost all of the cholesterol is produced in situ. Multiple in vitro studies have indicated that cholesterol in the brain is important for synapse biogenesis and vesicle formation. Cholesterol synthesis is a highly regulated process controlled by the master transcriptional regulator SREBP-2. We find that in mouse models of diabetes there is a broad reduction in the expression of genes in the cholesterol biosynthetic pathway throughout the brain, and results in decreased brain cholesterol synthesis. Brain-specific heterozygous knockout of genes involved in cholesterol synthesis mimic some of the changes observed in diabetes. Thus, diabetes and insulin both affect brain metabolism and brain function, and this produces systemic effects throughout the body.

C. RONALD KAHN

MARY K. IACOCCA PROFESSOR OF MEDICINE
HARVARD MEDICAL SCHOOL
JOSLIN DIABETES CENTER

MEMBER, INSTITUTE OF MEDICINE AND
NATIONAL ACADEMY OF SCIENCES

C. Ronald Kahn, M.D. is the preeminent investigator of insulin signal transduction and mechanisms of altered signaling in disease. He received his education at the University of Louisville. After training in internal medicine at Washington University, he moved to the National Institutes of Health where he rose to Head of the Section on Cellular and Molecular Physiology of NIDDK. In 1981, he became Research Director of the Joslin Diabetes Center, and in 1986 the Mary K. Iacocca Professor of Medicine at Harvard Medical School. From 2000-2007, he served as President and Director of the Joslin Diabetes Center. Under his leadership, Joslin research grew more than twenty-fold and its clinical and outreach efforts more than tripled.

Dr. Kahn has received numerous honors and awards, including the highest scientific awards of the American Diabetes Association, Juvenile Diabetes Foundation, European Association for the Study of Diabetes, British Endocrine Society, International Diabetes Federation, and Endocrine Society. Dr. Kahn has served on many national commissions, including as chair of the Diabetes Research Working Group and President of the American Society of Clinical Investigation. In 1999, Dr. Kahn was elected to membership in the National Academy of Sciences and the Institute of Medicine. Dr. Kahn holds honorary degrees from the University of Paris, University of Louisville, University of Geneva and Peking University School of Medicine.