

Michael A. Weiss



Current Position: Cowan-Blum Professor of Cancer Research and Professor of Biochemistry & Medicine (Endocrine Division), Chairman of the Department of Biochemistry at Case Western Reserve University School of Medicine in Cleveland, Ohio

Education: Ph.D. in Biophysics (1986) from Harvard University; M.D. (1985) from the Harvard Medical School/MIT Program in Health Sciences & Technology; A.B. in Physics (1978) from Harvard College

Non-scientific Interests: Art, history and travel; childhood education

I began to study insulin in 1985 as a clinical fellow in medicine at the Brigham & Women's Hospital. What began as a laboratory rotation during internship (with the encouragement of Drs. Marshall Wolf and Eugene Braunwald) led to a scientific adventure lasting almost 25 years. Studies, undertaken under the supervision of Professor Martin Karplus (Department of Chemistry) and the late Dr. Leo J. Neuringer (Francis Bitter National Magnet Laboratory at MIT), were begun in partnership with fellow research resident Dr. Steve Shoelson. Steve (now Professor of Medicine and Director of Research at the Joslin Diabetes Center in Boston) had previously participated in the discovery of the classical insulinopathies as a student at the University of Chicago.

Although insulin was considered well characterized even in 1985, the ensuing decades have uncovered one surprise after another—the fruits of an international effort to decipher the active structure of insulin, its mechanism of receptor binding, and conformational “life cycle.” My own scientific adventure with insulin has been enriched by a gifted group of students and fellows, colleagues Drs. Qing-xin Hua, S. Nakagawa, Zhu-li Wan and Jon Whittaker, and long-term collaborators Guy Dodson (York, UK), Pierre DeMeyts (Copenhagen DK), Panno Katsoyannis (Mt. Sinai, NY), Don Steiner (Chicago) and Peter Arvan (University of Michigan).

In this minireview, I describe the folding of proinsulin and the role of toxic misfolding in the genetics of diabetes mellitus.

Read Dr. Weiss' article entitled: Proinsulin and the Genetics of Diabetes Mellitus

<http://www.jbc.org/cgi/content/full/284/29/19159>