The Singapore Bioimaging Consortium (SBIC)
presents a seminar on

"Physiologic Approach to Pathogenesis of Metabolic Disease"

Speaker: **Richard N Bergman, PhD**
Director, Sports Spectacular Diabetes/Obesity Research Center, and
Alfred Jay Firestein Professor
Cedars Sinai Medical Center
Professor-in-Residence UCLA
Host : Prof Han Weiping
Date : Friday, 17 May 2019
Time : 11.30am – 12.30pm
Venue : SBIC Seminar Room
11 Biopolis Way
Level 2, Helios Building, Singapore 138667
(Please enter via SBIC Level 1)

Abstract

It is now clear that diabetes is a multifactorial disease, and it is of interest to understand the different factors which predict diabetes. The debate regarding the importance of beta cell dysfunction versus insulin resistance was resolved when the minimal model allowed to explain the hyperbolic relationship between these diseases. The "disposition index" is a powerful predictor of Type 2 diabetes. Also involved in plasma free fatty acid levels, which control glucose output by the liver. Another important fact is "glucose effectiveness," which is the ability of glucose per se to affect lliver glucose uptake. Finally, a recently understood factor is liver clearance of insulin. We know know that clearance varies among indivduals, and can be changed by environmental factors. We hypothesize that reduced insulin clearance can cause hyperinsulinemia is certain ethnic groups, and the latter causes insulin resistance, which stresses the beta cells resulting in diabetes. These studied demonstrate how it is possible to phenotype indivdiuals to find individual factors which predict diabetes, which may also apply to certain ethnic groups.

About the Speaker

Dr. Richard Nathan Bergman is an internationally respected expert in the areas of diabetes and obesity research. He holds an undergraduate degree in Engineering from Case-Western Reserve University (Case Alumni Scholar) and a Ph.D. in Physiology from the University of Pittsburgh. Professor Bergman was a pioneer in the application of mathematical modeling to metabolic regulation. He is well known for inventing the minimal model of carbohydrate regulation and the disposition index, the most powerful predictor of Type 2 diabetes. He has published almost 500 original manuscripts and has an "h-index" of 127 (83000 citations). Bergman was the Keck Foundation Chair at the USC Keck School of Medicine, and was Professor of Medicine and Biomedical Engineering and Chairman of Physiology/Biophysics for 17 years. In 2011 Dr. Bergman moved from USC to Cedars-Sinai Medical Center. He is founding Director of the Cedars-Sinai Sports Spectacular Diabetes and Obesity Research Institute. He holds the Alfred Jay Firestein Chair in Diabetes, and is Professor-in-Residence at UCLA. He served on the NIH metabolism study section for 6 years, and has reviewed for many organizations including

the American Diabetes Association, the JDRF, the Obesity Society, and the NIH (Director's New Innovator Award), and SCOR on gender differences for Northwestern University. He is a member of the Pathways for Diabetes program at the ADA. Bergman has received numerous awards, including the Banting Medal in 2006. In 2015 Dr. Bergman was awarded the Albert Renold Award from the American Diabetes Association; this award is specifically given for mentoring of diabetes researchers and establishing an outstanding environment for training in diabetes research. He held the Marble Lectureship at Harvard University in 2016.

--- Admission is free and all are welcome ---