

Acceptance Speech by Professor
Douglas L. Coleman
Co-Winner of the 2013 (1434H)
King Faisal International Prize for Medicine

35th Ceremony

Saturday 30/3/2013 – 18/5/1434H

Your Royal Highness Prince Salman Bin Abd Al-Aziz

Crown Prince Deputy Premier, Minister of Defense

Your Royal Highnesses,

Distinguished Guests,

I was surprised and deeply honored to be selected with Jeffrey Friedman for this award. I am also very pleased to be in the land of Islam, home of many centuries of scientific inquiry and discovery, including documentation dating back more than 3,000 years of the clinical features of diabetes mellitus.

In 1965 a new mutation, diabetes, was discovered. I was asked by a colleague to characterize the diabetes syndrome and compare it with an older mutant, obese. Both mutants were markedly obese, hyperphagic and mildly or severely diabetic. I found that both mutations produced identical diabetes-obesity syndromes when maintained on the same inbred background. This suggested that the two mutations might affect a common pathway. I carried out a series of experiments in which a diabetes mutant or an obese mutant was parabiosed to a normal mouse so that they will exchange blood. The results suggested that the diabetes mutants produce but cannot respond to a powerful satiety factor in their circulation, whereas the obese mouse can respond to but cannot produce this factor. The satiety center is located in the hypothalamus and the factor is now known as leptin.

At the time, I thought these were simple, interesting studies that would have little impact. How wrong I was! In 1994 both mutations were cloned and the field really opened up. A new hormone, leptin, was shown by my co-winner to be produced in adipose tissue showing that adipose tissue was not just an energy storage site but was a major, essential endocrine organ.

Thank you