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Ronald Evans to Deliver Public Talk at Janelia Farm

Ronald M. Evans, a Howard Hughes Medical Institute (HHMI) investigator at The Salk Institute for Biological Studies, will deliver a public talk, “Unlocking Ability: What Can Research Teach Us About Exercise?” at the Janelia Farm Research Campus in Ashburn, VA.

Evans will speak on Tuesday, June 9, 2009, at 7 PM. The event is free and open to the public, but tickets are required for admission. Directions for obtaining the tickets are available on the HHMI web site at www.hhmi.org/janelia/events.html. Seating is limited to 250 people.

The talk is the fourth in a series called “Dialogues of Discovery at Janelia Farm.” Past speakers in the twice-yearly series are Thomas R. Cech, former president of HHMI and an HHMI investigator at the University of Colorado, Boulder, Huda Y. Zoghbi, an HHMI investigator at Baylor College of Medicine, and Charles S. Zuker, an HHMI investigator at the University of California, San Diego.

During his talk, Evans will discuss his research which suggests that the difference between a “couch potato” and a marathon runner may lie in the activity of a family of genes that control the storage and burning of fat. By exploring the function of these key regulatory genes, Evans hopes to deepen our understanding of the molecular basis of obesity-related diseases such as diabetes and syndrome X, a disorder characterized by high blood pressure, heart disease, and insulin resistance. Ultimately his studies could lead to the development of drugs that might help people slim down and improve their overall health.

To date, Evans has turned up nearly 50 receptors that are part of a large family of nuclear receptors that recognize hormones and act as genetic switches to control gene activity. Two of these receptors, PPAR γ and PPAR δ , play key roles in regulating the storage and burning of fat. PPAR γ snatches fat from the blood and squirrels it away inside fat cells. Its sister protein, PPAR δ , regulates how muscles burn fat. When kept on a high-fat diet, mice that lack PPAR δ become obese. Mice that are engineered to produce an overactive version of the receptor in their muscle tissue remain sleek and lean. PPAR δ revs up cellular fat-burning pathways and beefs up the animals' slow-twitch muscle mass.

Evans and his colleagues have recently identified two drugs that mimic many of the physiological effects of exercise and increase the ability of cells to burn fat. The drugs are the first compounds that have been shown to enhance exercise endurance.

Evans's work has been recognized by many national and international awards and prizes, including the Albert Lasker Basic Medical Research Award, the Gairdner Foundation International Award, and the Grande Médaille d'Or of the French Academy of Sciences. He was elected to the U.S. National Academy of Sciences in 1989.

Evans earned his Ph.D. in microbiology from the University of California, Los Angeles. He has been an HHMI investigator since 1985.