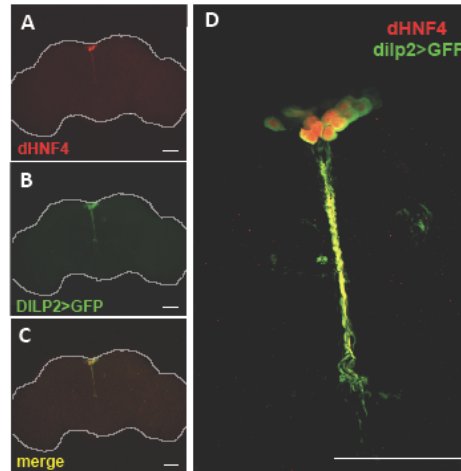




## Regulation of metabolism and diabetes in *Drosophila*



An alarming rise in the incidence of diabetes and obesity over the past few decades has refocused research efforts on the regulation of metabolism and the causes of metabolic disorders such as diabetes and obesity. Our lab is studying the regulation of metabolism using the fruit fly, *Drosophila*, as a model system. Remarkably, in spite of its small size and clear differences from mammals, many of the basic metabolic pathways are conserved through evolution from flies to humans. Flies have analogs of the tissues that control metabolism, including the equivalents of a liver, intestine, adipose tissue, pancreas, and kidneys. Many of the basic metabolic regulatory circuits are also intact. Thus, for example, flies secrete insulin-like peptides in response to elevated levels of circulating sugar, and mobilize stored energy in response to a hormone related to glucagon. Flies are also subject to similar metabolic disorders as people, and thus can acquire type 2 diabetes if exposed to a high sugar diet, or can more than double their fat content on a high fat diet. Our lab is studying the basic molecular mechanisms by which metabolism is controlled using the wide range of genetic tools available in *Drosophila*. We seek to uncover fundamental aspects of metabolic regulation that are conserved through evolution, with the aim of preventing and curing human disease.

### Dr. Carl S. Thummel

Professor, Department of Human Genetics  
University of Utah School of Medicine

Host: Dr. Howard Lipshitz

**Date:** Monday October 20<sup>th</sup>, 2014

**Time:** 4PM

**Place:** Fitzgerald Building, 150 College Street, Room 103