# **Animal Physiology Core**

The Animal Physiology Core (APC) employs sophisticated research methodologies to assist Einstein investigators in the in vivo assessment of glucose and fatty acid metabolism, insulin sensitivity and energy homeostasis in mice and rats. The APC enables investigators to thoroughly characterize the effects of defined pharmacological, dietary, environmental and genetic alterations on glucose and lipid homeostasis, insulin action, and metabolism. The Core performs studies of adiposity distribution and facilitates NMR spectroscopy, fMRI and microPET analysis of experimental animal models of diabetes undergoing metabolic studies. The Core also provides specialized rodent surgeries for investigator laboratories and several cardiac functional assessments related to diabetic complications. To accomplish these goals, the Animal Physiology Core will: 1) advise investigators in the design of metabolic studies relevant to the control of glucose homeostasis and insulin action in rodents; 2) make available to investigators specialized measurements of whole body and tissue-specific glucose sensitivity and insulin action including, but not limited to insulin, pancreatic and hyperglycemic clamp studies; 3) provide specialized surgical models for the study of insulin sensitivity, energy balance, and glucose and fatty acid metabolism; 4) offer instruction to students, postdoctoral fellows, investigators and technical staff in performing surgical and physiological techniques necessary to evaluate the controls of glucose homeostasis and insulin action; 5) provide analysis of whole body carbohydrate/fatty acid oxidation, energy expenditure, feeding behavior, and locomotor activity using specialized metabolic (indirect calorimetry) and behavioral rodent cages; 6) provide assessment of the effects of spontaneous or scheduled exercise on glucose homeostasis and metabolism; 7) make available to investigators specialized measurements of rodent adipose tissue distribution using microCT and measurements of glycogen in liver and muscle, intrahepatic lipids and intramyocellular lipids using NMR; and 8) make available to investigators specialized measurements of brain energy and glucose utilization by functional MRI (fMRI) and microPET scanning. All these services are available to investigators new to diabetes research, as well as to investigators working on diabetes-related projects that can be enriched and extended by the use of the expertise and facilities of this Core.

Gary J. Schwartz, Ph.D.

Departments of Medicine & Neuroscience

Albert Einstein College of Medicine

1300 Morris Park Avenue, Golding 501

Bronx, NY 10461

OFFICE: 718-430-2263

FAX: 718-430-2204

e-mail: gary.schwartz@einstein.yu.edu