Molecular Control of Metabolism and Metabolic Disease
Fall Semester

Guiding theme. Mammals go through fast-feed cycles. This requires adjustments in fuel utilization and in the regulation of metabolic pathways. The course will examine the various physiological states and how they affect metabolic pathways. We will also discuss a number of special topics related to the unique roles of various tissues and to metabolic pathways in disease states

	Date	Topic	Discussion Leader
1.	Thurs 09/03	Course introduction. Starve-feed cycles and hormonal regulation Glucose metabolism in various tissues Regulation of glycolysis Fatty acid oxidation Ketone body metabolism ChREBP	Alan Attie
2	Tues 09/08		
3.	Thurs 09/10		
4	Tues 09/15		
5.	Thurs 09/17	Gluconeogenesis , glycogen metabolism	Alan Attie
6.	Tues 09/22		
7.	Thurs 09/24	Oxidative phosphorylation and mitochondrial function	Rick Eisenstein
8.	Tues 09/29		
9	Thurs 10/01	Lipid absorption, lipoprotein and triglyceride metabolism, the LDL receptor pathfalkway Regulation of cholesterol synthesis, SREBP2, Insig, SCAP, PCSK9, Idol	Alan Attie
10.	Tues 10/06		
11.	Thurs 10/08	Metabolism under fasting conditions; β-oxidation, ketone body metabolism, gluconeogenesis, protein degradation and autophagy, PPARα,	Melkam Kebede Roz Anderson
12.	Tues 10/13		
13.	Thurs 10/15	Metabolic flexibility, pyruvate dehydrogenase, Randle Cycle, AMPK	
14.	Tues 10/20		
	Thurs 10/22	**Review & Discussion**	
	Tues 10/27	**Exam 1**	

15.	Thurs 10/29	Adipocyte biology; the biology of lipid droplets, glucagon and epinephrine, control of lipolysis	TBD
16.	Tues 11/03	β-cell biology and diabetes	Alan Attie
17	Thurs 11/05	Insulin signaling & insulin resistance	Dudley Lamming
18.	Tues 11/10	Inflammation	Roz Anderson
19.	Thurs 11/12	Epigenetics	Roz Anderson
20.	Tues 11/17	Machinery of life & regulatory nodes	Dudley Lamming
21.	Thurs 11/19	UPR, mTor, autophagy	Dudley Lamming
22.	Tues 11/24	Hypothalamic control of food intake and metabolism, circadian rhythms	TBD
	Thurs 11/26	**Thanksgiving**	
23.	Tues 12/01	Cancer metabolism	Dudley Lamming
24.	Thurs 12/03	Alzheimer's and other degenerative brain diseases	Roz Anderson
25.	Tue 12/08	Metabolic responses to exercising, aging, and metabolic disease	Dudley Lamming
26.	Thurs 12/10	Genetics or student presentations (if we have grad students enrolled)	
27.	Tue 12/15		
		Final Exam	