

Table 4: Sample schedule of five day course. The four different sessions that comprise a module are identified by color codes (see right).

[†]Open problems represent unanswered questions in the field.

^{††}Roundtable session will be used to develop projects through activities such as preparing and abstract or specific aims page

		Module identification color codes	
		Introduction to math method	
		Application of method to obesity	
		Hands-on interactive session	
		Open problems [†]	
Time	Speaker	Topic	
Day 1 - Mon 6/13/2016			
8:00 - 8:30	Diana Thomas, Montclair	Registration	
8:30 - 9:30	David Allison/Andrew Brown, UAB	Introductory remarks: A comedy of errors	
9:30 – 10:30	Steven Heymsfield, PBRC	Overview of state of the field of obesity and mathematical sciences	
10:30 – 11:30	David Allison, UAB	Overview of funding approach at NIH and other federal granting agencies	
Lunch 11:30-12:45			
Module 1: Outcomes in Obesity Randomized Controlled Trials (RCTs)			
1:00-1:45	Inmaculada (ChiChi) Aban, UAB	Introduction to RCTs and their quantitative analysis	
2:00-2:45	Peng Li, UAB	Missing data in randomized clinical trials	
3:00-4:00	Michael Oakes, U of Minnesota	Cluster Randomized Trials	
4:00-5:30	Moderated by Senior Researchers	Roundtable Session ^{††}	
Day 2 - Tue 6/14/2016			
Module 2: Modeling weight change using energy balance			
9:00 – 9:45	Diana Thomas, Montclair	Introduction to Energy Balance Models	
10:00 – 10:45	Ashuwin Vaidya, Montclair	Application of Energy Balance Models	
11:00-11:30	Corby Martin	Models delivered using smart phone technology	
Lunch 11:30-12:45			
Module 3: Modeling Effects in Populations			
1:00-1:45	Stephen Mennemeyer PhD, UAB	Using Simulation to Estimate Economic Effects: Examples from Cost-Effectiveness of Obesity Programs	
2:00-2:45	Bisakha Sen, PhD, UAB	Instrumental Variable Approaches	
3:00-4:00	Susan Chen, PhD, University of Alabama	Population Level Effects of Energy Balance Manipulations	
4:00-5:30	Moderated by Senior Researchers	Roundtable Session ^{††}	
Day 3 - Wed 6/15/2016			
Module 4: Modeling Pharmacological Interventions			
9:00 - 09:45	Clay Thompson, Pfizer	Perspectives on a Quantitative Systems Pharmacology Approach to Support Obesity Drug Discovery and Development	

10:00 – 10:45	Mirjam Trame, UFL	Modeling energy deficits in pharmacological interventions
11:00-11:45	Tawanda Gumbo	Open problems
Lunch		
Module 5: Modeling Behavioral Responses in Obesity		
1:00-1:45	Graham Thomas, Brown University	Application of models to monitor adherence
2:00-2:45	Douglas D. Gunzler, Ph.D.	Structural Equation Modeling in Obesity
2:45-3:45	Paula-Chandler Laney, UAB	Open Problems
4:00-5:30	Moderated by Senior Researchers	Roundtable Session ⁺⁺
Day 4 - Thu 6/16/2016		
Module 6: Sensor and Engineering Models in Obesity		
9:00 – 9:45	Edward, Sazonov, Alabama, Tuscaloosa	Overview of the field
9:30 – 10:30	Adam Hoover, Clemson University	Bite measurement methods and models
10:30 – 11:30	Ken McLeod, Binghamton	Regulating RMR to maintain heat balance and body mass
Lunch 11:30-12:45		
Module 7: Scaling Laws and Obesity		
1:00-1:45	Courtney Peterson, PBRC	Overview of the field
2:00-2:45	Dave Nelson, Univ S Alabama	Allometric Scaling & Whole-Animal Energy Balances
3:00-4:00	Steven Heymsfield, PBRC	Open Problems
4:15-5:30	Moderated by Senior Researchers	Roundtable Session ⁺⁺ Preparation for student presentations
Day 5 - Fri 6/17/2016		
Module 8: Statistical Modeling in Genetics		
9:00 – 09:45	Hemant Tiwari, UAB	Genetic Models in Obesity: Classic & Modern
9:30 – 10:45	Nengjun Yi, UAB	Bayesian Statistical Applications – What are they, why are they especially useful, and how are they used in obesity and genetics research
11:00 – 12:00	Xiangqin Cui, UAB	Methods and Concepts in Multiple Testing in High-Dimensional Research
Lunch		
1:00-1:45	Student Presentations	
2:00-2:45		
3:00-3:30		
3:30-4:00		
4:15-5:30		

<http://www.soph.uab.edu/energetics/shortcourse/third>

<https://www.soph.uab.edu/energetics/shortcourse/third/application>