

AGENDA: 4th Short Course R25DK099080 The Mathematical Sciences in Obesity

| Mon 6/26/2017 - Fri 6/30/2017 | | Module identification color codes |
|---|------------------------------------|---|
| The University of Alabama at Birmingham Executive Learning Center (ELC), 6th floor 1716 9 th Avenue South, SHPB 640 Birmingham AL 35233 | | Introduction to math method |
| | | Application of method to obesity |
| | | Hands-on interactive session |
| | | Open problems[†] |
| Time | Speaker | Topic |
| Day 1 - Mon 6/26/2017 | | |
| 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 6/27/2017 | | |
| Module 2: Modeling weight change using energy balance | | |
| 9:00 – 9:45 | Corey Gerving PhD, USMA West Point | Review of the laws of Thermodynamics |
| 10:00 – 10:45 | Diana Thomas, Montclair | Introduction 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 | Shawn Bauldry PhD, Purdue | Instrumental Variable Approaches |
| 3:00-4:00 | Bruce Lee MD, Johns Hopkins | Population Level Effects of Energy Balance Manipulations |
| 4:00-5:30 | Moderated by Senior Researchers | Roundtable Session ^{††} |
| Day 3 - Wed 6/28/2017 | | |
| Module 4: Modeling Obesity Interventions Through Networks | | |
| 9:00 - 09:45 | James Hill, UC Denver | Open problems |
| 10:00 – 10:45 | Ryan Miller, USMA | Introduction to Networks to Identify sub-Communities |

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| 11:00 – 11:45 | Kayla de la Haye ,USC | Informing obesity interventions using networks |
| Lunch | | |
| Module 5: Modeling Behavioral Responses in Obesity | | |
| 1:00-1:45 | Graham Thomas, Brown Univ | Application of models to monitor adherence |
| 2:00-2:45 | Rodney Sturdivant, Azusa Pacific University | 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 6/29/2017 | | |
| Module 6: Sensor and Engineering Models in Obesity | | |
| 9:00 – 9:45 | Edward, Sazonov, Alabama, Tuscaloosa | Overview of the field |
| 9:45 – 10:30 | Adam Hoover, Clemson Univ | 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, UAB | 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 6/30/20167 | | |
| Module 8: Evolutionary Genetics | | |
| 9:00 – 09:40 | David Meyre, McMaster Univ | Obesity, a collateral damage of evolution |
| 9:40 – 10 AM | Michael Sandel, Univ West Alabama: Q&A | |
| 10:00 – 10:40 | Yann Klimentidis, Univ Arizona | Asking and answering evolutionary genetic questions about obesity |
| 10:40 – 11 AM | Michael Sandel, Univ West Alabama: Q&A | |
| 11:00 – 11:40 | Andrew Higginson, Univ Exeter | Evaluating the logic of evolutionary explanations for obesity |
| 11:40 – 12 PM | Michael Sandel, Univ West Alabama: Q&A | |
| Lunch | | |
| 1:00-5:30 | Student Presentations | |

Course website:

<https://www.uab.edu/shp/home/energetics/courses/mathematical-sciences-shortcourse/fourth>

Registration website:

<http://www.uab.edu/shp/home/energetics/courses/mathematical-sciences-shortcourse/fourth-registration>