

AN ORGAN SYSTEMS APPROACH TO EXPERIMENTAL TARGETING OF THE METABOLIC SYNDROME

July 19 – 30, 2010

Detailed agenda available at
www.mc.vanderbilt.edu/diabetes/msshortcourse

Animal Behavior

- Animal handling and blood sampling
- Anesthesia and analgesia
- Modified Irwin Neurological screen
- Advanced behavioral testing
- Pharmacokinetic concepts

Glucose and Lipid Metabolism

- Evaluating glucose homeostasis
- *in vivo* Organ balance
- Glucose tolerance test
- Islet isolation and evaluation
- Liver perfusion
- Plasma lipid analysis and VLDL secretion
- Experimental design

Energy Balance

- Assess body composition
- High field MRI
- Energy balance using indirect calorimetry
- Design feeding studies
- Assess feeding behavior

Cardiovascular

- Evaluating Blood pressure
- Echocardiography
- High frequency ultrasonography
- Animal models of hypertension

LOGISTICS

The Metabolic Syndrome Course
is being held at:

Vanderbilt University Medical Center
All lectures will be held in Room 8455
Medical Research Building IV
Nashville, TN 37232-0615

The labs will be conducted in state of the art facilities. These include: Mouse Metabolic Phenotyping Center, Metabolic Physiology Shared Resource Core of the Diabetes Research and Training Center, Murine Neurobehavioral Laboratory and Center for Small Animal Imaging

Please plan to arrive on Sunday night, July 18, 2010 and depart after 3:00 pm on Friday, July 30, 2010. The Nashville International Airport is 20-30 minutes from the course location.

Course Registration and Materials

Course materials, coffee, snacks, lunch and 1-2 evening meals are included in the registration. Go to course website to register
www.mc.vanderbilt.edu/diabetes/msshortcourse

Accommodations and Information

Participants must provide evidence of medical insurance. Participants are responsible for their own travel and housing arrangements. See web site for specific registration information.

E-mail MSShortCourse@vanderbilt.edu if you are interested in listing for a roommate match.

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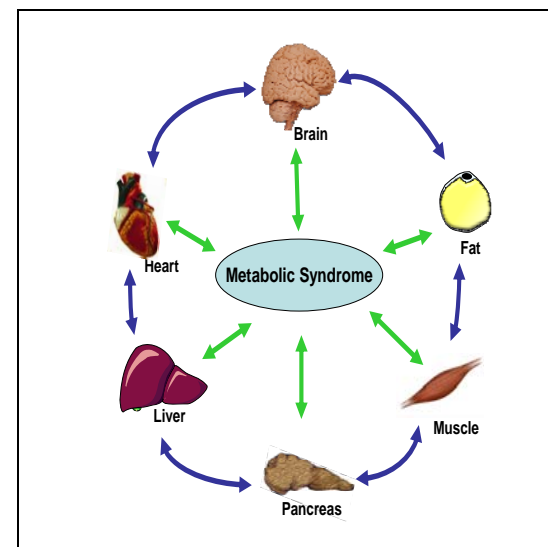
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**Vanderbilt University
Medical Center**



Nashville "Music City" Tennessee



Sponsors: A grant from the National Institute of General Medical Sciences (GM086771) with additional support from the Vanderbilt Diabetes Research Training Center (DK020593) and the Vanderbilt Mouse Metabolic Phenotyping Center (DK059637).



AN ORGAN SYSTEMS APPROACH TO EXPERIMENTAL TARGETING OF THE METABOLIC SYNDROME

Welcome to a two-week short course entitled “An organ systems approach to experimental targeting of the Metabolic Syndrome”. The metabolic syndrome is a cluster of metabolic risk factors that when they occur together increase the risk of heart disease, stroke and diabetes. These risk factors include insulin resistance, central obesity, dyslipidemia and hypertension. The Metabolic Syndrome is an epidemic and its prevalence is still on the rise. Clearly there is a need to understand the pathogenesis of the Metabolic Syndrome and learn ways to treat it.

The objective of the course is to give students the tools needed to assess whether an experimental intervention (pharmacologic, genetic, dietary, or environmental) alters macronutrient metabolism, energy balance, cardiovascular homeostasis or animal behavior. Moreover students will learn how to measure whole body and tissue specific kinetics, the principals of which can be applied to the kinetics of drugs, substrates and hormones. To accomplish this, we will use a combination of lectures, hands on laboratories, demonstrations and data problem sessions. Three guiding principles thread through the course components. 1) organ systems do not function in isolation; 2) primary mechanisms can best be identified by disrupting compensatory feedback loops using tools such as a “glucose clamp”; 3) proper animal care is critical to good outcomes. With regard to the last, the privilege of animal research is accompanied by the responsibility of treating animals humanely. Students will learn that the quality of data obtained in animal models is directly related to the health and well-being of the animals. All procedures involving animals will follow USDA and AAALAC guidelines.

Target Audience

This course is designed for graduate students (PhD level), postdoctoral fellows and young faculty (academic or industrial) who seek a basic understanding of animal handling, physiology, behavior and experimental techniques relevant to understanding the interaction between metabolic, cardiovascular and behavioral systems.

Course Directors

Owen P. McGuinness, PhD. – Vanderbilt
Christopher Olsen, PhD. - Vanderbilt
Masakazu Shiota, DVM, PhD - Vanderbilt

Faculty

Troy Apple, DVM - Vanderbilt
Malcolm Avison, PhD - Vanderbilt
Julio Ayala, PhD - Burnham Institute
Joey Barnett, PhD - Vanderbilt
Kelli Boyd, DVM, PhD, DACVP - Vanderbilt
Marcela Brissova, PhD - Vanderbilt
Shawn Burgess, PhD - University of Texas
Southwestern
Alan Cherrington, PhD - Vanderbilt
Roger Cone, PhD - Vanderbilt
Kate Ellacott, PhD - Vanderbilt
Sylvia Gografe, DVM, PhD, DACLAM - Vanderbilt
Alyssa Hasty, PhD - Vanderbilt
Carrie Jones, PhD - Vanderbilt
Matthew Luther, MD - Vanderbilt
Mary Moore, PhD - Vanderbilt
Gregory Morton, PhD - University of Washington,
Seattle
Kevin Niswender, MD, PhD - Vanderbilt
Larry Swift, PhD - Vanderbilt
Patrick Tso, PhD - University of Cincinnati
David Wasserman, PhD - Vanderbilt
Roy Zent, MD, PhD - Vanderbilt

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A limited number of scholarships for registration are available for the course.

Fran Tripp, Course Assistant
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Online REGISTRATION

www.mc.vanderbilt.edu/diabetes/msshortcourse

Course is limited to 20 participants
Deadline for Registration is May 14, 2010

Students should submit a CV and information on career history and goals, the objective of the prospective student in taking the course, a completed application form and a letter of recommendation (preferably from a work supervisor or research director)

Registration Fee:

NIGMS has provided resources to offset some of the cost of the course. Make check or purchase order in the amount of \$500 (\$3,500 industry) payable to:

*Vanderbilt University Medical Center
Experimental Targeting of the Metabolic Syndrome*

Mail Documents and Check to:

Metabolic Syndrome Course
Fran Tripp, Program Coordinator
Vanderbilt MPB
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Nashville, TN 37232-0615