

**Mouse Metabolic  
Phenotyping Center**



# Cincinnati Mouse Metabolic Phenotyping Center

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2012 - 2013

Metabolic Diseases Institute

# Cores

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- Administrative / Statistical
- Animal Husbandry
- Lipid, Lipoprotein, and Glucose Metabolism

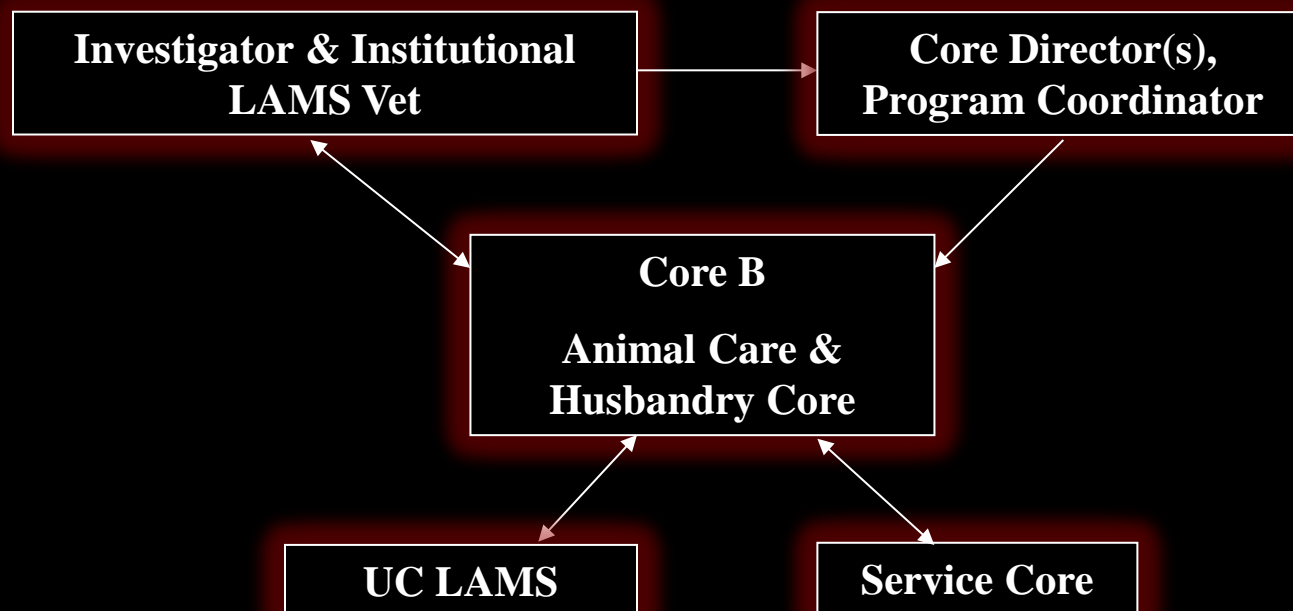
# Animal Husbandry Core

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- The Animal Husbandry Core continues to oversee the receipt and transfer of mice from both inside and outside investigators requesting services.
- Core B also serves as liaison to the UC veterinary and LAMS staff regarding issues of quarantine, space, and protocol modifications.

# Animal Flow Chart

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# Seminar Series

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- Established in January, 2009, the Seminar Series has been highly successful and is very well attended by members of the MMPC as well as other investigators from UC and Cincinnati Children's Hospital.
- The goal of this Seminar Series is to improve and refine our phenotyping capability. Interactions between members of UC and invited speakers have ignited interesting discussions on various mouse models and forged new collaborations.

# Seminar Series Speakers

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SPEAKER	DATE	TITLE OF SEMINAR
<b>Dr. Dongsheng Cai</b> Albert Einstein COM	10/2/13 – 10/3/13	Hypothalamic inflammation, autophagy and degeneration in metabolic syndrome
<b>Dr. Frank Sacks</b> Harvard School of Public Health	6/12/13 – 6/14/13	Apolipoprotein C-III: From Epidemiology to Metabolism to Basic Science
<b>Dr. Guoyao Wu</b> Texas A&M AgriLife	4/3/13 – 4/5/13	Amino acid metabolism in the small intestine: implications for nutrition and health
<b>Dr. Fayeze Ghishan</b> Univ. of Arizona Medical Center	12/19/12 – 12/21/12	Inflammatory Bowel Disease: Bench to Bedside

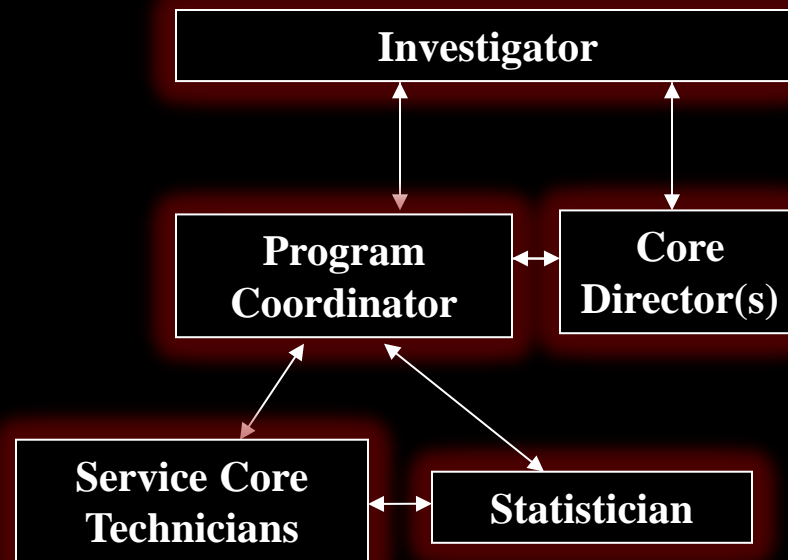
# MMPC Visitors

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INVESTIGATOR	DATE	REASON FOR VISIT
<b>Dr. Robert McNamara</b> University of Cincinnati COM	8/20/13	Shadowed service core technician to learn fatty acid analysis by gas chromatography.
<b>Dr. Devanand Sarkar</b> Virginia Commonwealth Univ.	8/9/13	Cite visit. Discussion of future project and use of service core.
<b>Dr. Fred Minnear</b> West Virginia University	6/13/13 – 6/15/13	Met with MMPC staff to discuss his research on lung pathology.
<b>Dr. David Wang</b> St Louis Univ School of Medicine	4/29/13 – 5/2/13	Performed necropsies on ApoAV knockout mice. Instructed surgical staff on excision and pathology of gall bladder.
<b>Myrtha Arnold</b> Swiss Federal Institute of Tech. Zurich	3/2013 – 5/2013	Gave demonstrations and training of specific mouse microsurgery techniques including SDA and catheter implantation.

# Sample Flow Chart

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# Core C - Services

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- Lipid & Lipoprotein Analysis
  - Lipid Profiles (TG, CHOL, PL, NEFA)
  - Intestinal lipid absorption -Lymph Fistula
  - FPLC
  - Chylomicron metabolism
  - Cholesterol synthesis (de novo)
  - Fatty Acid Analysis
  - Folch Extraction
  - Tissue – TG
  - Tissue - Chol
  - Fecal Fat Absorption

# Core C - Services

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## ■ GI Hormone and Peptide Determination

- GTT
- IST
- Insulin
- Leptin
- Glucose
- Glucagon
- Euglycemic-hyperinsulinemic clamping
- GIP
- GLP-1
- C-peptide
- Adiponectin
- Resistin
- $\beta$ -hydroxybutyrate

# Core C - Services

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## ■ Energy Balance Services

- Body Composition
- Energy Expenditure – Oxymax
- Food Intake / Meal Pattern
- Telemetry – Activity & Temperature

## ■ Cardiovascular Services

- Telemetry – Cardiac Parameters
- Echocardiography

# Center Activities, Productivity and Program Income in the Prior Project Period (YR 12)

*(7/1/2012 - 5/31/2013)*

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CORE SERVICES PROVIDED	Accepted Requests (#local/#external)	Services/Assays (#local/#external)
Lipid Profiles	95 (16 / 79)	8741 (1243 / 7498)
GI Peptides Analyses	37 (14 / 23)	2009 (804 / 1205)
Non-invasive Measure of Fecal Fat Absorption	17 (5 / 12)	338 (127 / 211)
Fatty Acid Analysis by GC	13 (7 / 6)	604 (166 / 438)
Lipid Extraction / Tissue Lipids	7 (4 / 3)	157 (109 / 48)
Lipoprotein Fractionation by FPLC	10 (2 / 8)	76 (15 / 61)
Body Compositions	9 (2 / 7)	215 (20 / 195)
Energy Expenditure	8 (3 / 5)	227 (52 / 175)

# Center Activities, Productivity and Program Income in the Prior Project Period

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CORE C	Project Year 12
Publications citing UC MMPC: Center co-authorship	6
Publications citing UC MMPC: No Center co-authorship	9
Program Income (7/1/2012 – 5/31/2013)	\$157,525.70

# Utilization of Program Income Fund

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1. Update of existing equipment.
2. Service contracts and repair of existing equipment.
3. Explore new technology.
4. Provide financial support for additional technical staff.
5. Support Seminar Series