Research in Nutrition and Exercise Physiology (NEP)

Jill Kanaley, PhD
Associate Chair
Mission: The mission of the Department of Nutrition and Exercise Physiology at the University of Missouri is to improve the health of Missourians and the larger population through research, teaching and outreach related to nutrition and physical activity. We strive to be a diverse set of leaders, innovators and educators who promote improved human health through our focus on nutrition and physical activity.
Dept. NEP Overview

Current Research Program: Obesity
(Signature Areas):

- Metabolic Dysfunction: Exercise & Dietary Effects
- Eating Behavior
- Behavioral Interventions to Improve Health
- Interactions between Exercise, Genetics & Obesity
- Micronutrient & Nutraceutical Effects on Health & Disease
Basic science and animal models

Human mechanistic studies

Clinical research

Community interventions

Disease Risk

Healthcare Costs

↓ Healthcare Costs

↑ Quality of life

Sinclair School of Nursing Health Behavior/Risk Res. Center

Nutrition Extension, Adolescent Db and Obesity Clinic, Social Cognitive Neuroscience Lab

Brain Imaging Center, Health/Medicine Database (REDCap, Cerner)

Animal Metabolic Core Mass Spectrometry Lab

MU Nutritional Center for Health (MUNCH), and MU Physical Activity & Wellness (MU PAW), McKee Gym
Research Collaborations

Kanaley
Rector
Parks
Padilla
Vieira-Potter
Ball
Gable
Hinton
Peterson
Fritsche
Pulakat
Keller
Limberg

Behavioral interventions in child care and preschool settings
Endocrine & glycemic control, exercise, diabetes
Energy balance & bone turnover
Satiety, fMRI, human feeding
Diabetes, CVD, Renin angiotensin system new drugs
Exercise, oxidative stress, liver metabolism
Behavior/biologic modulation of adipose tissue
Vascular function, CV effects of physical inactivity
Vit D in health, adipoinsular axis & fetal programming
Neural control of CV system, sleep apnea
Body composition, youth physical activity
Evaluation of community nutrition education & health programs
Diet, w-3 fatty acids immune function
NEP Signature Areas

**Metabolic Dysfunction: Exercise & Dietary Effects**
- Jill Kanaley
- Pam Hinton
- Jaume Padilla
- Scott Rector
- Elizabeth Parks
- Catherine Peterson
- Victoria Vieira-Potter
- Lakshmi Pulakat
- Jackie Limberg

**Appetite & Eating Behavior**
- Elizabeth Parks
- Jill Kanaley
- Katherene Anguah

**Behavioral Interventions to Improve Health**
- Steve Ball
- Pam Hinton
- Kimberly Keller
- Sara Gable
- Elizabeth Parks
- Jill Kanaley
- Jaume Padilla

**Interactions between Exercise, Genetics & Obesity**
- Jaume Padilla
- Scott Rector
- Victoria Vieira-Potter
- Lakshmi Pulakat
- Jill Kanaley

**Micronutrient & Nutraceutical Effects on Health & Disease**
- Catherine Peterson
- Pam Hinton
- Scott Rector
- Kevin Fritsche
Research

5 of 6 most recent hires by Dr Hardin have NIH funding

State of the Art facilities

MUNCH and MUPAWS
‘MUNCH’ is a 1840 sq ft state-of-the-art facility that facilitates a broad range of nutrition research & lifestyle interventions to examine the impact of various foods & diets on human health.
‘MU-PAW’ is a 2250 sq ft designated (human) clinical research facility for the assessment of (semi)-invasive physiological & behavioral health-related outcomes.
MU NEP CORE LAB

The wet-lab is 3400 sq ft & has adjoining animal & human wings
McKee Gym is a 3000 sq ft space for exercise training subjects.
MU Exercise Training

McKee Gym is a 3000 sq ft space for exercise training subjects.
NEP is the primary user of the CRC for investigator-initiated studies. Dr. Parks also participates in pharmaceutical research.
Teaching: Dietetics

- Nikki Raedeke, RD, Ph.D. (Program Director)
- Le Greta Hudson, RD, CDE
- Jennifer Bean, MS, RD
Where are we going?

Planned Hires:

As part of precision medicine:
- nutrigenomics,
- epigenetics,
- human feeding
- precision exercise (e.g. cancer)

Involvement with:
- Addiction center – already in discussions with the chair of Psychology
- Vascular health
- Cancer
- Sleep disorders
Where are we going?

NIH T32 submission in Feb – Drs. Parks and Fay

Working on a PPG – Healthy Lipid Consortium – Dr Fritsche

Botanical center - with Dr Luban will cross the colleges of CAFNER, HES and SOM
Any questions?