Committee on Molecular Metabolism and Nutrition

Chair
• Christopher Rhodes

Professors
• Maria-Luisa Alegre, Medicine
• Graeme Bell, Medicine
• Deborah Burnet, Medicine
• Eugene Chang, Medicine
• Alexander Chervonsky, Pathology
• Anita Chong, Surgery
• Suzanne Conzen, Medicine
• Anna DiRienzo, Human Genetics
• David Ehrmann, Medicine
• Murray Favus, Medicine
• Godfrey Getz, Pathology (Emeritus)
• Bana Jabri, Medicine
• James Liao, Medicine
• Deborah Nelson, Neurobiology, Pharmacology and Physiology
• Louis Philipson, Medicine
• Victoria Prince, Organismal Biology and Anatomy
• Christopher Rhodes, Medicine
• F. Gary Toback, Medicine
• Eve Van Cauter, Medicine
• Yingming Zhao, Ben May Department for Cancer Research
• Xiaoxi Zhuang, Department of Neurobiology

Associate Professors
• Marc Bissonnette, Medicine
• Matthew Brady, Medicine
• Ronald Cohen, Medicine
• Yan Chun Li, Medicine
• Kay Macleod, Ben May Department for Cancer Research
• Vivek Prachand, Surgery

Assistant Professor
• Lev Becker, Pediatrics
• Eunice Chen, Psychiatry & Behavioral Neuroscience
• Kristen Knutson, Medicine
The Committee on Molecular Metabolism and Nutrition is a dynamic and interactive research unit of the University of Chicago offering interdisciplinary doctoral training in the molecular basis of biological processes as they relate to nutrition and human disease. The graduate program in molecular metabolism and nutrition offers a program of study leading to the Doctor of Philosophy in Molecular Metabolism and Nutrition. Faculty expertise includes the areas of insulin secretion, diabetes genetics, nutritional regulation of epithelial cell biology, intestinal absorption, adaptation, and malabsorption, water/nutrient/electrolyte transport, nutriceuticals, atherogenesis, abnormalities in lipid and lipoprotein metabolism, vitamin D research, insulin metabolic signaling, transcription factors and adipogenesis, impact of nutrition on reproductive biology, glucocorticoid action and sleep research. A mixture of nationally recognized senior faculty and dynamic junior faculty provide a stimulating and supportive environment designed to guide graduate students through course work and research training. Major resources include transgenic mouse facilities, flow cytometry, microscope imaging suites, microarray and gene chip facilities, computational labs and facilities for human research. The committee works closely with the government sponsored Diabetes Research and Training Center, Digestive Disease Research Core Center, Training Program in Digestive Diseases and Nutrition, and the Clinical Research Center to offer a broad array of choices for research topics.

The Committee on Molecular Metabolism and Nutrition is a member of the Biomedical Sciences Cluster, which also includes graduate programs from the Committee on Cancer Biology, the Committee on Immunology, the Committee on Microbiology and the Department of Pathology’s Molecular Pathogenesis and Molecular Medicine Graduate Program. The five academic units share several common courses, a seminar series, and additional common events for students and faculty within the cluster. The goal of the cluster system is to encourage interdisciplinary interactions among both trainees and faculty, and to allow students flexibility in designing their particular course of study.

**ADMISSION**

Students interested in obtaining the Ph.D. in Molecular Metabolism and Nutrition should submit an application to the Biological Sciences Division by December 1st of each year; indicate their cluster of interest as Biomedical Sciences and select Molecular Metabolism and Nutrition as their proposed degree program.

**THE DEGREE OF DOCTOR OF PHILOSOPHY**

Ph.D. requirements include:
• Completion of 9.5 course credits consisting of basic science, metabolism and elective courses.
• A preliminary exam in the form of a mock NIH-style grant proposal.
• A dissertation based on original research.
• A final thesis examination.

MOLECULAR METABOLISM AND NUTRITION COURSES

MOMN 36500. Molecular Nutrition I. 100 Units.
Students are exposed to a comprehensive review of nutritional physiology and requirements, including the regulated digestion, synthesis and/or metabolism of vitamins, minerals, lipids, proteins and carbohydrates. Various lecturers specialized in specific areas of metabolic research participate throughout the quarter. The course culminates with the students writing a comprehensive paper linking several of the topics covered throughout the quarter.
Instructor(s): C. Reardon and staff Terms Offered: Autumn. Autumn 2015

MOMN 36600. Molecular Nutrition II. 100 Units.
This course is an extension of Molecular Nutrition 1 and investigates the physiological control of systemic metabolism. Heavy emphasis is placed on the coordinate regulation of glucose and lipid metabolism by skeletal muscle, liver, adipose tissue, pancreas and brain. The format of the course is a combination of lectures and student presentations of primary literature. At the end of the course, students are expected to write a grant application to investigate a current area of metabolism research and then present and defend the proposal to the lecturers and students.
Instructor(s): M. Brady, C. Reardon, Staff Terms Offered: Winter. Winter 2016
Equivalent Course(s): MPMM 36600

MOMN 40200. Topics in Nutrition Research. 100 Units.
This course is conducted as a seminar series. Students will broaden their exposure to metabolism related research through bi-weekly faculty and student presentations of research data and primary literature. Additionally, prominent researchers from other institutions are invited to give a seminar and meet alone with the students to discuss their career paths, experiences in running successfully funded labs and use of cutting edge experimental approaches. Attendance is mandatory for first and second year students but all students are strongly urged to attend.
Instructor(s): M. Brady Terms Offered: Autumn, Spring, Winter