DEPARTMENT OF NUTRITION (GRAD)

Contact Information
Department of Nutrition
http://www.sph.unc.edu/nutr

Elizabeth J. Mayer-Davis, Chair

Nutrition is a department within the Gillings School of Global Public Health.

Following the faculty member's name is a section number that students should use when registering for independent studies, reading, research, and thesis and dissertation courses with that particular professor.

Professors

Linda S. Adair (34), Maternal and Child Nutrition, Nutrition and Global Health, Child Growth, Long-Term Effects of Early Childhood Nutritional Exposures

Alice S. Ammerman (41), Community-Based Nutrition and Physical Activity Intervention and Policy/Environmental Change for Chronic Disease Prevention (Obesity, Cancer, Heart Disease, Diabetes), Addressing Health Disparities, Healthy Food Access through Local, Sustainable Food Systems

Melinda Beck (70), Antioxidant Nutrition and Infectious Disease, Obesity and Infectious Disease, Nutritional Status and Immune Function

Margaret Bentley (67), Nutritional Anthropology, Infant and Young Child Feeding, Growth, and Development, HIV/AIDS and Breastfeeding, Pediatric Obesity

Cynthia M. Bulik (98), Twin and Molecular Genetic Studies of Eating Disorders and Weight Regulation, Information Technology-Aided Approaches to Treatment of Eating Disorders and Overweight, Eating Disorders and Reproduction, Parenting Assistance for Women with Eating Disorders, Eating Disorders Clinical Trials

Rosalind A. Coleman (39), Diabetes: Lipid and Carbohydrate Metabolism, Obesity, Partitioning of Energy between Triacylglycerol Storage and Fatty Acid Oxidation, Regulation of Triacylglycerol Synthesis, Fatty Acid Metabolism and Cardiac Function

Penny Gordon-Larsen (78), Obesity Epidemiology, Obesity, Diabetes and Cardiovascular Risk, Longitudinal Studies, Gene by Environmental Interactions

Anthony C. Hackney (50), Endocrine and Metabolic Responses to Physical Stress, Physiology of Exercise

Stephen Hursting (35), Nutrition, Metabolism, and Cancer Prevention; Obesity, Diabetes, and Cancer; Molecular Targets for Cancer Prevention

Mark Koruda, Surgery, Parenteral and External Nutrition

Sergey A. Krupenko (8), Folate Nutrition, Metabolism, and Cancer; Diet and Metastatic Disease; Metabolic Enzymes and Liver Function

Pauline K. Lund (69), Insulin-Like Growth Factors, Intestinal Development, Nutrient and Cytokine interactions in Intestinal inflammation, Injury and Repair, Intestinal Stem Cells

Leslie Lytle (19), Obesity Prevention in Youth and Young Adults; Behavioral and Policy Interventions in School, Community, and Family Settings; Individual, Social, and Environmental Factors Related to Diet and Physical Activity

Nobuyo Maeda (77), Animal Models of Hyperlipidemia, Atherosclerosis and Cardiomyopathy

Elizabeth J. Mayer-Davis (33), Nutrition and The Etiology and Treatment of Type 1 and Type 2 Diabetes in Children and Adults, Epidemiology of Diabetes in Youth and Young Adults, Diabetes Self-Management for Adolescents and Young Adults Living with Type 1 Diabetes

Barry M. Popkin (17), Nutrition Transition, Patterns and Determinants of Dietary Trends and Body Composition Trends (United States and Low-Income Countries), Obesity Dynamics and Their Environment Causes, Dietary and Physical Activity Patterns, Trends and Determinants, Creation of Large-Scale Program and Policy Initiatives to Address Nutrition-Related Noncommunicable Diseases

Anna Maria Siega-Riz (62), Maternal Nutrition and Birth Outcomes, Infant and Child Dietary Habits, Obesity Development in Women of Reproductive Age, Infants and Children, Gestational Diabetes, Diet Methodology and Reproductive Epidemiology

Susan Smith, Personalized Nutrition, Gene / Diet Interactions Affecting Prenatal Development, Iron Metabolism, Mechanisms of Fetal Alcohol Spectrum Disorders

Susan Sumner (36), Eastern Regional Comprehensive Metabolomics Research Center, Center for Estimating Human Health Risks from Exposure to Nanoparticles, Metabolism, Translational Sciences, Biomarkers

June Stevens (56), Epidemiologic Studies of the Causes and Consequences of Obesity, Intervention Trials to Prevent Obesity, Obesity Trends, Risk Factors and Consequences among Ethnic Groups, Long-Term and Short-Term Effects of Obesity and Weight Change on Health, Impact of State Level Obesity Policies

Miroslav Styblo (72), Biochemistry and Molecular Toxicology of Essential and Toxic Trace Metals and Metalloids

James Swenberg (55), Chemical Carcinogenesis and Toxicology, DNA Damage and Repair, Oxidative Stress, Biomarkers and Mass Spectrometry

Deborah F. Tate (95), Obesity Prevention and Treatment in Adults and Adolescents, Application of New Technology and the Internet to Behavioral Treatments for Overweight, Obesity Treatment in Worksites and Community Settings

Dianne Ward (79), Child- and Family-Based Interventions to Prevent Obesity, Assessment of Child Care and Home Environments, Assessment of Physical Activity and Diet

Steven H. Zeisel (38), Nutrients and Brain Development, Choline Metabolism and Requirements in the Human, Nutrigenomics, Computer-Assisted Instruction

Associate Professors

Ramon Bataller (28), Molecular Mechanisms of Alcoholic and Nonalcoholic Steatohepatitis, Translational Research to Identify New Targets for Therapy

Liza Makowski Hayes (64), Glucose and Fatty Acid Transport, Metabolism, and Inflammation in Immune Cells in Obesity, Atherosclerosis, and Cancer

S. Raza Shaikh, Obesity, Infection, Inflammation, Cardiovascular Diseases, Dietary Fatty Acids, Membrane Biochemistry and Biophysics, Regulation of Mitochondrial Structure-Function

Amanda Thompson (51), Developmental Origins of Obesity, Infant Feeding, Microbiome, and Social and Behavioral Pathways Underlying the Development of Inflammation and Cardiometabolic Disease Risk

Assistant Professors

Sandra Albrecht (37), Social Epidemiology of Nutrition and Cardiovascular Risk, Disparities in Obesity and Diabetes among United States Latinos, Immigrant Health, Behavioral and Biological Mechanisms Underlying Social Disparities in Nutrition-Related Outcomes
Kyle S. Burger (49), Determinants of Ingestive Behavior and Weight Regulation, Neural and Psychological Drivers and Consequences of Unhealthy Food Intake

Ian Carroll (32), Intestinal Microbiota, Host-Microbe Interactions, Brain-Gut-Microbe Axis, Gastrointestinal Diseases, Eating Disorders, Fecal Microbiota Transplants, Pro-, Pre-, Syn-, and Psychobiotics

Folami Ideraabdullah (7), Elucidating Genetic Mechanisms of Epigenetic Perturbation Caused by Environmental Exposure to Dietary Factors or Toxicants

Natalia Krupenko (3), Folate Nutrition, Methylation and Disease; Nutrients and Sphingolipid Metabolism; Ceramide and Cancer

Michelle Mendez (85), Diet, Environmental Contaminants, and Health Outcomes such as Obesity and Related Disorders, Neurodevelopment, and Cancer

Katie Meyer (4), Nutritional Epidemiology, Cardiovascular Disease, Dietary Behavior

Carmina Valle, Cancer Prevention and Control, Cancer Survivorship, Technology-Delivered Behavioral Interventions for Nutrition, Physical Activity, and Weight Management in Cancer Survivors, Adolescent and Young Adult Oncology, Tailored Health Communication

Saroja Voruganti (18), Nutritional and Genetic Epidemiology, Gene-Environment Interaction and Cardiovascular-Renal Diseases, Population Genetics and Ethnic Disparities

Research Professors

Martin Kohlmeier (53), Nutritional Genetics, Personal Nutrition, Online Nutrition Guidance, Biomarkers in Nutritional Epidemiology, Lipoprotein Metabolism, Vitamin K Transport and Function, Nutrition Education in Medical Schools, Computer-Assisted Instruction


Daniel Pomp (90), Obesity: Genetic Predisposition for Components of Energy Balance, Gene X Diet Interactions, Fat as a Risk Factor for Cancer

Research Associate Professors

Shufu Du (83), How Underlying Factors (Such as Education, Income, and Other SES) Affect Dietary Behaviors and Physical Activity/Inactivity and Then Health Outcomes (Cancer, Cardiovascular Diseases, Diabetes, and Obesity)

Shu Wen Ng (74), Economic, Sociodemographic and Environmental Determinants of Diet, Physical Activity and Weight Gain, Nutrition Transition in Low- and Middle-Income Countries, Food and Nutrition Policy and Systems, Large-Scale Voluntary and Regulatory Policy and Program Evaluations (United States and International), Big Data Approach, Econometrics

Kimberly Truesdale (73), Obesity Epidemiology, Causes and Cardiometabolic Consequences of Obesity, Effect of Weight Maintenance on Health, Minority Health, Body Composition, Diet Methodology, Diet Quality, Cost Effectiveness Analysis

Research Assistant Professors

Emma Allott (82), Molecular Epidemiology of Breast Cancer and Prostate Cancer: Role of Diet, Obesity, and Dyslipidemia in Tumor Aggressiveness and Progression; Characterization of Intertumor and Intratumor Biomarker Heterogeneity for Cancer Subtyping; Molecular Mechanisms Contributing to Cancer Health Disparities

Zhaohui Cui, Intentional and Unintentional Weight Change and Cardiometabolic Health, Metabolically Healthy Obesity and Metabolically Unhealthy Normal Weight

Molly De Marco (27), Community-Based Food Access, Community-Based Participatory Research, Local Food Systems, Health Disparities, Social Determinants of Health

Temitope Erinoshio (11), Role of Nutrition, Physical Activity, and Obesity in Cancer Prevention, with Special Emphasis on Children, Racial and Ethnic Minorities, and Socioeconomically Disadvantaged Populations

Valerie Flax (42), Design and Evaluation of Interventions Intended to Improve the Health and Nutritional Status of Mothers and Children in Low-Income Countries

Derek Hales (61), Measurement, Physical Activity, and Determinants of Physical Activity Behavior

Wimal Pathmasiri, Metabolomics, Identifying Biomarkers for the Early Detection of Disease and Monitoring Nutritional Intervention, Understanding the Impact of Diet and Naturally Occurring Molecules in Diet on Gut Microbiome-Related Metabolism, Food/Dietary Supplement and Drug Interactions

Jennifer Poti (9), Nutritional Epidemiology; United States Population-Based Dietary Trends; Determinants of Food Purchasing Patterns, Dietary Intake, and Dietary Quality; Diet and Obesity

Carmen Samuel-Hodge (86), Interventions in Diabetes Self-Management Education, Weight Loss and Lifestyle Behavior Change Interventions, Peer Counselors/Lay Advisors in Community-Based Nutrition Interventions, Family-Centered Interventions

Lindsey Smith-Taillie (6), Nutrition Epidemiology, Food and Nutrition Policy, International and United States Nutrition Transition, Social and Behavioral Determinants of Diet and Food Purchases, Disparities, Diet Quality, Diet and Obesity

Delisha Stewart, Natalia Surozenko, Role of Choline and Other Nutrient Bioactive Compounds in the Regulation of Fetal Brain and Eye Development in Mouse Models

Jomari Torres, Manya Warrier (60), One Carbon Metabolism in Adipose Browning

Heather Wasser (12), Caregiver Feeding Practices; Infant and Toddler Dietary Intakes; Nutritional Status, Growth, and Development; Determinants of Adherence to Optimal Feeding Recommendations for Children Birth to Two Years; Behavioral Interventions to Promote Optimal Growth and Development of Infants and Toddlers

Clinical Assistant Professors


Eric Klett (45), Diabetes, Lipid Metabolism, Glucose Homeostasis, Dietary Lipids, Pancreatic Beta-Cell Function, Insulin Secretion, and Eicosanoid Metabolism

Adjunct Professor

John J.B. Anderson, Calcium, Isoflavones, Other Nutrients and Bone Indices in Women, Osteoporosis, Physical Activity and Body Composition, Diet and Aging

Adjunct Associate Professors

Boyd Switzer, Nutrition and Cancer

Melicia Whitt-Glover, Identify Effective Strategies to Increase Weight Loss and Weight Gain Prevention among African Americans
Adjunct Assistant Professors

Marlyn Allicock, Cancer Prevention and Control, Dissemination Research and Evaluation, Health Disparities
Andrea Anater
Judith Borja
Melissa Daniels, International Maternal and Child Nutrition, Dietary Assessment Methods, Screening of Malnutrition Risk
Juhaeri Juhaeri, Obesity Epidemiology, Cardiovascular Epidemiology, Pharmacoepidemiology and Epidemiology Methods
Lucia A. Leone, Food Access Disparities, Cancer and Obesity Prevention, Community-Based Interventions
Lindsey Maslow
Meghan Slining, Global Obesity and Overweight, Dietary Intakes of United States Children and Adolescents

Professors Emeriti

Janice M. Dodds
Joseph C. Edozien
Maryann C. Farthing

Associate Professor Emerita

Pamela S. Haines

NUTR

Advanced Undergraduate and Graduate-level Courses

NUTR 400. Introduction to Nutritional Biochemistry. 3 Credits.
Function of the human body focusing on chemical properties, function, and metabolism of nutrients. Biochemistry of nutrients with a limited focus on medical aspects of nutrient metabolism. For advanced undergraduates and graduate students needing to enhance background prior to NUTR 600.
Requisites: Prerequisites, BIOL 101, CHEM 101 and 102, and NUTR 240; permission of the instructor for students lacking the prerequisites.
Grading status: Letter grade.

NUTR 600. Human Metabolism: Macronutrients. 3 Credits.
Cell biochemistry and physiology emphasizing integration of proteins, carbohydrates, and lipids in whole-body metabolism; regulation of energy expenditure, food intake, metabolic adaptations, and gene expression; and macronutrient-related diseases (atherosclerosis, obesity).
Requisites: Prerequisite, NUTR 400; permission of the instructor for students lacking the prerequisite.
Grading status: Letter grade.

NUTR 611. Nutrition across the Life Cycle. 3 Credits.
This course covers nutrition during the life cycle. Units include women during preconception, pregnancy, and lactation; infancy; childhood; adolescence; and older adults (65+). Nutrient and energy needs, assessment of nutritional status, and cultural and socioeconomic barriers are discussed for each phase.
Requisites: Prerequisite, NUTR 400.
Grading status: Letter grade
Same as: MHCH 611.

NUTR 620. HUMAN METABOLISM: MICRONUTRIENTS. 3 Credits.
Cell biochemistry and physiology emphasizing metabolism of vitamins and minerals including antioxidant protection, immune function, nutrient control of gene expression, and disease states induced by deficiencies (e.g., iron-deficient anemia).
Requisites: Prerequisites, NUTR 400 and 600; permission of the instructor for students lacking the prerequisites.
Grading status: Letter grade.

NUTR 630. Nutrition Communication, Counseling and Culture. 3 Credits.
Course teaches the future nutrition professional the art and science of communicating with individuals, groups, and the public. Students will enhance cultural awareness, practice counseling individuals and facilitating groups, and frame nutrition messages for mass media including social media.
Requisites: Prerequisite, NUTR 240; permission of the instructor for students lacking the prerequisite.
Grading status: Letter grade.

NUTR 640. Medical Nutrition Therapy I: Chronic Disease Management. 3 Credits.
Course designed to examine the rationale and implementation of diet therapy and nutrition support in the prevention or treatment of chronic disease.
Requisites: Prerequisite, NUTR 630.
Grading status: Letter grade.

NUTR 642. Medical Nutrition Therapy II: Acute Disease Management. 3 Credits.
Course designed to examine the rationale and implementation of diet therapy and nutrition support in the prevention or treatment of acute diseases.
Requisites: Prerequisite, NUTR 640.
Grading status: Letter grade.

NUTR 650. Food Science and Culinary Arts. 2 Credits.
Introduction to foods, chemical and physical properties, nutritional composition, food safety, production, and regulation.
Requisites: Prerequisite, NUTR 400; corequisite, NUTR 650L.
Grading status: Letter grade.

NUTR 650L. Food Science and Culinary Arts Laboratory. 1 Credit.
Basic culinary techniques. Classes illustrate biochemical processes and food properties covered in lecture. Introduction to new foods and food ideas. Critical evaluation of recipes. Laboratory fee required. Three laboratory hours per week.
Requisites: Corequisite, NUTR 650.
Grading status: Letter grade.

NUTR 660. Food Service Systems Management. 2 Credits.
Permission of the instructor for nonmajors. Basic concepts of institutional food service systems management applied to small and medium-sized health care facilities in the community.
Requisites: Co-requisite, NUTR 660L.
Grading status: Letter grade.

NUTR 660L. Food Service Systems Management Experience. 1 Credit.
This is a food service management practicum that applies the basic concepts of institutional food service systems. Two laboratory hours per week.
Requisites: Co-requisite, NUTR 660.
Grading status: Letter grade.
NUTR 692H. Honors Research in Nutrition. 3 Credits.
Permission of the instructor. Directed readings or laboratory study of a selected topic. Requires a written proposal to be submitted to and approved by the B.S.P.H. Committee and faculty research director. A written report is required. May be taken more than once for credit. Six laboratory hours per week.
Gen Ed: EE-Mentored Research.
Grading status: Letter grade.

NUTR 695. Nutrition Research. 1-9 Credits.
Permission of the instructor. Individual arrangements with faculty for bachelor and master students to participate in ongoing research.
Repeat rules: May be repeated for credit; may be repeated in the same term for different topics; 12 total credits. 8 total completions.
Grading status: Letter grade.

NUTR 696. Readings in Nutrition. 1-9 Credits.
Permission of the instructor. Reading and tutorial guidance in special areas of nutrition.
Repeat rules: May be repeated for credit; may be repeated in the same term for different topics; 12 total credits. 8 total completions.
Grading status: Letter grade.

Graduate-level Courses

NUTR 700. Nutrition in Medicine. 2 Credits.
Comprehensive review of nutrition basics with strong clinical perspective. Integrates nutrient biochemistry and metabolism into a framework of nutritional assessment and dietary intervention.
Requisites: Prerequisite, BIOL 252 and NUTR 600.

NUTR 720. Public Health Nutrition Management I. 2 Credits.
Focuses on the roles and functions of the public health nutritionist in providing nutrition services at the community level that includes domestic and international nutrition programs, essential public health services, community assessment methods, and community engagement. For the MPH-RD student, it includes 336 hours of field experience.
Requisites: Prerequisites, NUTR 630 and 640, HBEH 600.

NUTR 725. Public Health Nutrition Management II. 3 Credits.
An overview of the planning and management of local, state, federal, and voluntary public health nutrition programs. Examines legislative and administrative structures.
Requisites: Prerequisite, NUTR 720.

NUTR 728. Nutrition Translational Research and Application. 2 Credits.
Permission of instructor for nonmajors. Designed to focus on translational nutrition research and application, including grant writing, to prepare students in clinical, public health, and policy arenas.
Requisites: Prerequisites, EPID 600, NUTR 725; and NUTR 813 recommended.

NUTR 735. National Nutrition Issues. 1 Credit.
Three-day in-depth seminar held in Washington, DC on national nutrition issues, policy formulation, and program development with key congressional staff, federal agencies staff, and pertinent public interest/consumer advocacy groups. Paper required. Field fee required.
Requisites: Prerequisite, NUTR 725; permission of the instructor for students lacking the prerequisite.

NUTR 745. International Nutrition. 3 Credits.
Provides a broad overview of international nutrition research issues, programs, and policies. Topics will include micronutrient deficiencies, child feeding and growth, determinants of under- and over-nutrition, chronic disease and nutrition, food fortification and supplementation, and nutrition intervention programs and policy.

NUTR 746. Taxes, Bans & Burgers: Directed Readings in Global Food Policy. 1 Credit.
Course will explore the social, historical, and political context of how individuals make decisions about what to eat; how this context shapes food policy; and how these policies in turn shape individual behavior, by employing a comparative framework over three countries (China, Mexico, and the U.S.).

NUTR 747. Issues in Global Nutrition. 3 Credits.
A review of the global burden of nutrition-related non-communicable diseases and to contributing global trends in the food system that shape policies and practices affecting nutrition and health outcomes.

NUTR 785. Graduate Teaching Experience. 1 Credit.
Permission of the instructor. Individual arrangements with faculty for a graduate student to serve as a teaching assistant for a nutrition course.
Repeat rules: May be repeated for credit.

NUTR 803. Advanced Nutrition Intervention Research Seminar. 1 Credit.
Development and application of critical thinking skills in the analysis of important nutrition and policy interventions. The course will examine conceptual models, research designs, intervention strategies, and measures of effectiveness in historical and innovative nutrition research.
Repeat rules: May be repeated for credit. 4 total credits. 2 total completions.

NUTR 808. Global Cardiometabolic Disease Seminar. 1 Credit.
This core seminar addresses biology, genetics, epidemiology, intervention and policy strategies relevant for addressing global cardiometabolic disease, as well as, professional development and responsible conduct of research in global settings.
Repeat rules: May be repeated for credit. 4 total credits. 4 total completions.

NUTR 810. Physical Activity Epidemiology and Public Health. 3 Credits.
This course provides an overview of major issues in physical activity measurements, population distribution, correlates, impacts (physically and economically), and public health recommendations. Interventions, including relevant theories, will be reviewed. Three lecture hours per week.
Requisites: Prerequisite, EPID 600.
Same as: EPID 810.

NUTR 811. Development and Evaluation of Health Promotion and Disease Prevention Interventions. 3 Credits.
Permission of the instructor for non-majors. Doctoral seminar on application of theory and empirical evidence to intervention development, evaluation paradigms, and methods of process and outcome evaluations.
Same as: HBEH 811.

NUTR 812. Introduction to Obesity: Cell to Society. 3 Credits.
Provides a broad survey of obesity research including measurement issues, biological, social and economic etiologies, health and economic consequences, and prevention and treatment of obesity.

NUTR 813. Nutritional Epidemiology. 3 Credits.
This course introduces basic methods of dietary assessment, reviews various topics in nutrition epidemiology, and teaches the skills needed for critical evaluation of the nutritional epidemiologic literature.
Requisites: Prerequisites, BIOS 600, and EPID 600 or 710.
Same as: EPID 813.
NUTR 814. Obesity Epidemiology. 3 Credits.
Examines epidemiology research on the causes, consequences, and prevention of obesity. Emphasis on methodological issues pertinent to obesity research.
Requisites: Prerequisites, BIOS 600, EPID 710, 715, and NUTR 813/EPID 813.
Same as: EPID 814.

NUTR 818. Analytical Methods in Nutritional Epidemiology. 3 Credits.
Skills and techniques to study how dietary exposures, physical activity, and anthropometric status relate to disease outcomes. Focus is hands-on data analysis using STATA, and interpretation of results from statistical analysis.
Requisites: Prerequisites, BIOS 545, EPID 600 or 710, and NUTR 813.
Same as: EPID 818.

NUTR 845. Nutritional Metabolism. 3 Credits.
A problem-based approach to examine current topics in biochemistry relevant to nutrition and metabolism. Students interpret data and design experiments related to recent advances in nutritional biochemistry.
Requisites: Prerequisite, NUTR 600.

NUTR 861. Advanced Nutritional Biochemistry: Nutrition and Immunology. 2 Credits.
Presents an understanding of basic immunology and the role of nutrition in modifying the immune response.
Requisites: Prerequisites, NUTR 600 and 620.

NUTR 863. Adv Nutr Biochemistry: Microenvironments-Inflammation in Obesity, Atherosclerosis, and Cancer. 2 Credits.
Will examine the interaction of cells in the microenvironment and recent advances in the role of metabolism and inflammation.
Requisites: Prerequisite, NUTR 600; permission of the instructor for students lacking the prerequisite.

NUTR 864. Adv Nutr Biochemistry: Oxidative Stress and Nutritional Antioxidants in Human Health and Disease. 2 Credits.
Course provides basic information about the cellular and molecular mechanisms that are responsible for generation of reactive oxygen and nitrogen species, about key cellular structures targeted by these species, and about the role of oxidative stress and antioxidants in etiology and prevention of human diseases.
Requisites: Prerequisites, BIOL 101, CHEM 102, and NUTR 400; Permission of instructor for non-majors.

NUTR 865. Advanced Nutritional Biochemistry: Nutrigenetics and Nutrigenomics. 2 Credits.
Permission of the instructor. Course focuses on nutrigenetics and nutrigenomics with an emphasis on the genetic and dietary interactions predisposing one to increased risk of disease.
Same as: GNET 865.

NUTR 867. Advanced Nutritional Biochemistry: Vitamins and Disease. 2 Credits.
Focuses on the molecular processes involving B and D-group vitamins, mechanisms of pathologies caused by their deficiency, as well as the latest studies on nutritional requirements, population consumption levels, and use of the vitamins for treatment and prevention of human disease.
Requisites: Prerequisites, NUTR 600 and 620; permission of the instructor for students lacking the prerequisites.

NUTR 868. Advanced Nutritional Biochemistry: Nutrition and Cancer. 2 Credits.
The course will cover the biology of cancer as well as the metabolic and physiological functions of nutritional factors and how they impact the cancer process. The course will focus on aspects of current research that are relevant to links between nutritional factors, with emphasis on mechanism-based cancer prevention approaches.
Requisites: Prerequisite, NUTR 600 or equivalent.

Permission of the instructor for undergraduates. Seminar addressing current public health nutrition policy challenges and controversies including school lunch standards, sugar-sweetened beverages, Farm Bill, federal food programs, Affordable Care Act, and policies affecting local food systems like food policy councils, farm to school programs, and good agricultural practices (GAP) certification.

NUTR 880. Elements of Being a Scientist. 3 Credits.
Permission of the instructor. For doctoral students prepared with Ph.D. aims/focus. Focuses on key elements that contribute to a successful career as a scientific researcher. These include scientific presentations, NIH proposal grant writing, evaluating published manuscripts, sources of funding, peer review, use of animals and humans in research, and scientific ethics.

NUTR 885. Doctoral Seminar. 1 Credit.
This course is designed for doctoral and master of science students only. Critical review of current literature in nutritional biochemistry, intervention and policy, and population-based nutrition science. Focuses on the development of skills in reviewing and criticizing articles.

NUTR 910. Nutrition Research. 1-9 Credits.
Individual arrangements with faculty for doctoral students to participate in ongoing research.

NUTR 920. Research Rotations for Nutritional Biochemistry Doctoral Students. 1-3 Credits.
Two laboratory or research group rotations supervised by nutritional biochemistry faculty. Provides a breadth of research experience for students prior to selecting dissertation adviser. Up to six laboratory hours per week.

NUTR 992. Master's (Non-Thesis). 3 Credits.

NUTR 993. Master's Research and Thesis. 3 Credits.

NUTR 994. Doctoral Research and Dissertation. 3 Credits.