

# DEPARTMENT OF NUTRITION (GRAD)

## Contact Information

### Department of Nutrition

Visit Program Website (<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 Environment 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

**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

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

**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

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

**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

**Shu Wen Ng (74)**, Health and Behavioral Economics, Policy, Obesity Prevention, Health Equity

**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

**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

**Stephanie Martin (66)**, Evaluation of Behavioral Interventions in Low-Income Countries to Improve Maternal and Child Nutrition

**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

**Philip A. May**, Prevalence and Characteristics of Children with Fetal Alcohol Spectrum Disorders (FASD) in South Africa, the United States, and Italy, Maternal Risk Factors for FASD Including Dietary Intake and Nutrition, Epidemiology Research on Public Health Problems with Major Behavioral Components

## 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)

**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

**Molly DeMarco (27)**, Health Disparities, Food Systems, Community-Based Participatory Research, Food Insecurity

**Temitope Erinsho (11)**, Cancer, Nutrition and Physical Activity, Obesity

**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

**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**, Cancer and Immunology-Focused Studies, Etiology and Progression of Cancer Microenvironments

**Natalia Surzenko**, Role of Choline and Other Nutrient Bioactive Compounds in the Regulation of Fetal Brain and Eye Development in Mouse Models

**Stephanie Thomas**, Intestinal Microbiome, Metabolomics, Intestinal Permeability, Microbiome-Gut-Brain Axis

**Manya Warriar (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

**Amanda S. Holliday (99)**, Professional Development, Clinical Nutrition, Clinical Nutrition Management, Nutrition and Aging

**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

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

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

## Adjunct Assistant Professors

**Marilyn Allcock**, Cancer Prevention and Control, Dissemination Research and Evaluation, Health Disparities

**Melissa Bauseman**, Infant Nutrition, International Nutrition, Micronutrient Deficiencies and Child Growth

**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

**Damaris Lorenzo**, Genetics, Live Cell Imaging, Roles of Cytoskeletal Proteins in Human Disease

**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 691H. Honors Research in Nutrition. 3 Credits.**

This is an honors course for research for the first semester of senior year, to be followed by NUTR 692H in the second semester. NUTR 691H/692H is a two-course sequence. Enrollment is only for students approved to conduct a senior honors thesis project.

**Requisites:** Prerequisite, NUTR 295.

**Gen Ed:** EE- Mentored Research.

**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.

**Grading status:** Letter grade.

**NUTR 705. Human Nutrition. 3 Credits.**

Fundamental scientific premises of human nutrition. This course covers the basic concepts of macro and micronutrients, food sources, and the evidence-based requirements for a healthy diet. This course integrates nutritional needs of populations, with an emphasis on nutrition-related diseases, including over and undernutrition.

**Grading status:** Letter grade.

**NUTR 715. Medical Nutrition Therapy: Chronic Disease Management. 4 Credits.**

A lecture and skills course where students practice skills used in nutrition therapy and the Nutrition Care Process (such as calculating caloric intake and modifying intake, calculating diabetic diets, calculating sodium content of intakes, etc.) under the supervision of a Registered Dietitian.

**Requisites:** Prerequisites, NUTR 611 and 630.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**NUTR 723. Public Health Nutrition Management. 3 Credits.**

An overview of the planning and management of local, state, federal, and voluntary public health nutrition programs. Examines legislative and administrative structures.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.).

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**NUTR 770. Nutrition and Health Behavior. 3 Credits.**

This course is designed to introduce students to nutrition interventions and help students develop knowledge and skills necessary to critically analyze, describe, and evaluate behavioral nutrition interventions.

The course covers concepts, skills and methods related to nutrition interventions, with an emphasis on theory-based interventions at the individual, community, or environmental levels to improve health and nutrition outcomes.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**NUTR 805. Nutrition Policy. 3 Credits.**

This course focuses on nutrition policy on a federal, state, and local level.

Topics covered include policy formation, interest/consumer advocacy groups, key legislation, how research informs policy, equity and diversity, global food policy issues, sustainability and health, advocacy, and current public health nutrition policy examples. Permission of the instructor for undergraduates.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade

**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.

**Grading status:** Letter grade

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade

**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 545, EPID 715, 716 and NUTR 812 or NUTR 813/EPID 813.

**Grading status:** Letter grade

**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.

**Grading status:** Letter grade

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**NUTR 910. Nutrition Research. 1-9 Credits.**

Individual arrangements with faculty for doctoral students to participate in ongoing research.

**Grading status:** Letter grade.

**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.

**Grading status:** Letter grade.

**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.**

## Master of Public Health (M.P.H.) Nutrition with Registered Dietitian (R.D.) Training Concentration Description

The unique Nutrition M.P.H./R.D. concentration (<https://sph.unc.edu/resource-pages/master-of-public-health-2/mp-h-rd-program>) integrates the scientific study of nutrition and dietetics with a foundation in public health practice and research. Meant for aspiring clinical dietitians who are motivated to help people live healthier lives through better nutrition, the program offers students customized internship placement services

to help fulfill the requirements to sit for the Commission on Dietetic Registration exam.

## Requirements

Requirements for the **M.P.H.** degree in the **Nutrition-R.D.\*** concentration

Code	Title	Hours
<b>M.P.H. Integrated Core</b>		
SPHG 711	Data Analysis for Public Health <sup>Fall 1</sup>	2
EPID 711	Clinical Measurement and Evaluation <sup>Fall 1</sup>	3
SPHG 713	Understanding Public Health Issues <sup>Fall 1</sup>	2
SPHG 721	Conceptualizing Public Health Solutions <sup>Spring 1</sup>	2
SPHG 722	Developing, Implementing, and Evaluating Public Health Solutions <sup>Spring 1</sup>	4
<b>M.P.H. Concentration</b>		
NUTR 611	Nutrition across the Life Cycle <sup>Fall 1</sup>	3
NUTR 630	Nutrition Communication, Counseling and Culture <sup>Fall 1</sup>	3
NUTR 400	Introduction to Nutritional Biochemistry <sup>Spring 1</sup>	3
NUTR 640	Medical Nutrition Therapy I: Chronic Disease Management <sup>Spring 1</sup>	3
NUTR 600	Human Metabolism: Macronutrients <sup>Fall 2</sup>	3
NUTR 723	Public Health Nutrition Management <sup>Fall 2</sup>	3
NUTR 805	Nutrition Policy <sup>Fall 2</sup>	3
NUTR 620	HUMAN METABOLISM: MICRONUTRIENTS <sup>Spring 2</sup>	3
NUTR 813	Nutritional Epidemiology <sup>Spring 2</sup>	3
NUTR 650 & 650L	Food Science and Culinary Arts and Food Science and Culinary Arts Laboratory <sup>Spring 2</sup>	3
Food Management Experience <sup>Spring 2</sup>		
Advanced Placement <sup>Summer 2</sup>		
<b>M.P.H. Practicum</b>		
SPHG 701	MPH Practicum Preparation <sup>Spring 1</sup>	2
Practicum: 200 minimum hours <sup>Summer 1</sup>		
SPHG 702	MPH Practicum Reflection <sup>Fall 2</sup>	1
<b>M.P.H. Culminating Experience</b>		
NUTR 992	Master's (Non-Thesis) <sup>Summer 2</sup>	3
Total Hours		49

## Competencies

Students will develop the following **Nutrition-R.D.\*** competencies, building on the foundational public health knowledge they attain in the Gillings M.P.H. Integrated Core courses. After successful demonstration of these ACEND<sup>1</sup> competencies, students will be eligible to sit for the Registered Dietician credentialing exam.

C1.1.	Applies an understanding of environmental, molecular factors (e.g. genes, proteins, metabolites) and food in the development and management of disease.
C1.2.	Applies an understanding of anatomy, physiology, and biochemistry.
C1.3.	Applies knowledge of microbiology and food safety.

C1.4.	Integrates knowledge of chemistry and food science as it pertains to food and nutrition product development and when making modifications to food.
C1.5.	Applies knowledge of pathophysiology and nutritional biochemistry to physiology, health, and disease.
C1.6.	Applies knowledge of social, psychological, and environmental aspects of eating and food.
C1.7.	Integrates the principles of cultural competence within own practice and when directing services.
C1.8.	Applies knowledge of pharmacology to recommend, prescribe and administer medical nutrition therapy.
C1.9.	Applies an understanding of the impact of complementary and integrative nutrition on drugs, disease, health, and wellness.
C1.10.	Applies knowledge of math and statistics.
C1.11.	Applies knowledge of medical terminology when communicating with individuals, groups, and other health professionals.
C1.12.	Demonstrates knowledge of and is able to manage food preparation techniques.
C1.13.	Demonstrates computer skills and uses nutrition informatics in the decision making process.
C1.14.	Integrates knowledge of nutrition and physical activity in the provision of nutrition care across the life cycle.
C1.15.	Applies knowledge of nutritional health promotion and disease prevention for individuals, groups, and populations.
C1.16.	Gains a foundational knowledge on public and global health issues and nutritional needs.
C2.1.	Applies a framework to assess, develop, implement, and evaluate products, programs, and services.
C2.2.	Selects, develops, and/or implements nutritional screening tools for individuals, groups, or populations.
C2.3.	Utilizes the nutrition care process with individuals, groups or populations in a variety of practice settings.

C2.4.	Implements or coordinates nutritional interventions for individuals, groups or populations.
C2.5.	Prescribes, recommends and administers nutrition-related pharmacotherapy.
C3.1.	Directs the production and distribution of quantity and quality food products.
C3.2.	Oversees the purchasing, receipt and storage of products used in food production and services.
C3.3.	Applies principles of food safety and sanitation to the storage, production and service of food.
C3.4.	Applies and demonstrates an understanding of agricultural practices and processes.
C4.1.	Utilizes program planning steps to develop, implement, monitor and evaluate community and population programs.
C4.2.	Engages in legislative and regulatory activities that address community, population and global nutrition health and nutrition policy.
C5.1.	Demonstrates leadership skills to guide practice.
C5.2.	Applies principles of organization management.
C5.3.	Applies project management principles to achieve project goals and objectives.
C5.4.	Leads quality and performance improvement activities to measure, evaluate and improve a program services, products and initiatives.
C5.5.	Develops and leads implementation of risk management strategies and programs.
C6.1.	Incorporates critical thinking skills in practice.
C6.2.	Applies scientific methods utilizing ethical research practices when reviewing, evaluating and conducting research.
C6.3.	Applies current research and evidence-informed practice to services.
C7.1.	Assumes professional responsibilities to provide safe, ethical and effective nutrition services.
C7.2.	Uses effective communication, collaboration and advocacy skills.

\* ACEND (<https://www.eatrightpro.org/acend>), 2017 Accreditation Standards for Graduate Degree Programs in Nutrition and Dietetics (FG) Future Education Model. (<https://www.eatrightpro.org/-/media/eatrightpro-files/acend/futureeducationmodel/femgraduatefinal.pdf?la=en&hash=89123715A3E0E426F0A0CA960299FFEA06714FE5>)

## Master of Public Health (M.P.H.) Nutrition Concentration Description

The Nutrition concentration (<https://sph.unc.edu/resource-pages/master-of-public-health-2/nutrition-concentration>) focuses on nutrition science as well as on behavior change, communication, counseling, and the effects of dietary culture on the individual and within communities. Students gain the skills to assess scientific evidence for nutritional guidelines, effectively communicate nutritional information to the public, evaluate how social, cultural, and environmental factors affect nutrition-related health outcomes, and practice in compliance with federal regulations and state statutes.

### Requirements

Requirements for the M.P.H. degree in the Nutrition concentration

Code	Title	Hours
<b>M.P.H. Integrated Core</b>		
SPHG 711	Data Analysis for Public Health <sup>Fall 1</sup>	2
SPHG 712	Methods and Measures for Public Health Practice <sup>Fall 1</sup>	2
SPHG 713	Understanding Public Health Issues <sup>Fall 1</sup>	2
SPHG 721	Conceptualizing Public Health Solutions <sup>Spring 1</sup>	2
SPHG 722	Developing, Implementing, and Evaluating Public Health Solutions <sup>Spring 1</sup>	4
<b>M.P.H. Concentration</b>		
NUTR 705	Human Nutrition <sup>Fall 1</sup>	3
NUTR 611	Nutrition across the Life Cycle <sup>Spring 1</sup>	3
NUTR 630	Nutrition Communication, Counseling and Culture <sup>Fall 2</sup>	3
NUTR 805	Nutrition Policy <sup>Fall 2</sup>	3
NUTR 813	Nutritional Epidemiology <sup>Spring 2</sup>	3
<b>M.P.H. Practicum</b>		
SPHG 701	MPH Practicum Preparation <sup>Spring 1</sup>	2
Practicum: 200 minimum hours <sup>Summer 1</sup>		
SPHG 701	MPH Practicum Preparation <sup>Fall 2</sup>	2
<b>M.P.H. Electives</b>		
Elective (Graduate-level courses)		3
Elective (Graduate-level courses)		3
Elective (Graduate-level courses)		3
<b>M.P.H. Culminating Experience</b>		
NUTR 992	Master's (Non-Thesis) <sup>Spring 2</sup>	3
Total Hours		43

### Competencies

Students will develop the following **Nutrition competencies**, building on the foundational public health knowledge they attain in the Gillings M.P.H. Integrated Core courses.

NUTR01.	Assess the scientific evidence for nutritional guidelines/ recommendations.
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NUTR02.	Assess dietary intake and nutrition status of individuals and populations.
NUTR03.	Evaluate how social, cultural, environmental, and community factors have an impact upon dietary intake and nutrition-related outcomes in individuals, families, and communities.
NUTR04.	Independently plan, develop, and evaluate nutrition-related health promotion/disease prevention services, products, programs, or interventions (including policy analysis), using appropriate evidence or data.
NUTR05.	Demonstrate proficiency in writing evidence-based nutrition-related professional and consumer communications, using a variety of communication platforms.
NUTR06.	Practice in compliance with current federal regulations and state statutes and rules related to public health nutrition programs.

### Admissions

Please visit Applying to the Gillings School (<https://sph.unc.edu/students/how-to-apply>) first for details and information. Application to the residential M.P.H. is a two-step process. Please apply separately to (1) SOPHAS and (2) UNC–Chapel Hill (via the Graduate School application).

Visit <https://gradschool.sites.unc.edu/master-of-public-health/> for more details. If you are interested in the online M.P.H., please visit the M.P.H.@UNC (<https://onlinemph.unc.edu>) Web site and fill out an inquiry form.

### Practicum

This 200 (minimum) hour planned, mentored, and evaluated work experience (paid or unpaid) gives students the real-world opportunity to integrate and apply knowledge, skills, and values from Year One of their Gillings M.P.H. training in a professional public health setting such as a nonprofit organization, hospital, local or state health department, or for-profit firm (public or private sectors). Please visit the M.P.H. Practicum Web site (<https://sph.unc.edu/resource-pages/master-of-public-health-2/mph-practicum>) for additional information. In order to meet graduation requirements, a Gillings M.P.H. practicum must:

1. Occur after a student has completed the Gillings M.P.H. Core courses, the M.P.H. practicum preparation course (SPHG 701), and at least one concentration-required course from the student's declared concentration. In extenuating circumstances and with the approval from the student's declared concentration, some exceptions may apply.
2. Yield a least two student-generated products, produced in the practicum setting for the practicum setting, that allow for attainment of at least three (CEPH) M.P.H. Foundational and two concentration-specific competencies (Appendix A). In extenuating circumstances and with the approval from the concentration, students can petition to substitute up to two CEPH Foundational competencies for the concentration-specific competencies.

3. Be mentored by a supervisor (preceptor) with an advanced degree in public health or equivalent experience with expertise in the practicum project area.
4. Comprise a *minimum* of 200 hours (equivalent to five weeks of full-time work) in a location approved for student travel (UNC Travel Policy (<https://global.unc.edu/files/2018/02/UNC-Travel-Policy-Final.pdf>)), and the student must complete *UNC Gillings International Pre-Departure Travel Requirements* prior to travel.

### Culminating Experience

Each student completes a 3-credit culminating experience and produces a high-quality written product that is completed near the end of the program of study. This culminating experience ideally is delivered in a manner that is useful to external stakeholders, such as nonprofit or governmental organizations, and could take the form of a course-based capstone project or master's paper, but will be tailored to the concentration a student chooses.

### Academic Advising and Faculty Mentoring

We are committed to providing quality academic advising and mentoring for all students. We ensure that M.P.H. students get the guidance they need with several components: 1) an orientation program that provides an overview of the types and sources of M.P.H. advising; 2) cohort advising sessions to disseminate information that is relevant to course planning and registration; 3) faculty mentoring that provides students with tailored support for their academic, professional, personal development, and practicum support.

M.P.H. students will complete a 2-semester, 12-credit-hour **Integrated Core** taught by an interdisciplinary team of instructors. The 6-credit first semester (fall) focuses on understanding public health issues, and the second semester (6-credit spring courses) focuses on creating solutions to those issues.

All M.P.H. students take **COMPASS (Core Online Modules to Promote and Accelerate Student Success)**. These brief, self-paced online modules are open for students prior to their first academic year. Students can complete any and all parts of COMPASS up to and including the first week of class.

**Electives:** For the remaining 9 credits, students are free to choose elective courses from any of the 12 concentration areas listed above or from other courses in the Gillings School.

For information on policies and procedures, please visit the Gillings School Student Handbook (<https://sph.unc.edu/students/gillings-school-student-handbook>) Web site.