

Description of the Division of Nutritional Sciences

Relation to the Discipline(s) and to the University

The Division of Nutritional Sciences (DNS) is an academic unit at Cornell University, the Land Grant University for the State of New York. The DNS was established in 1974 and is jointly administered by the **College of Human Ecology (CHE)** and the **College of Agriculture and Life Sciences (CALS)**. Its faculty and academic staff organize and orient their scholarly pursuits to fulfill **three primary missions**: 1) generating knowledge through scientific *research*, 2) facilitating learning by teaching and mentoring the next generation of scholars, researchers, nutrition professionals and responsible citizens from a variety of disciplines through undergraduate, graduate and professional *education*, and 3) reaching outside the University in New York State, nationally and globally to improve nutrition and human health and inform nutrition policy and practice through *public engagement* (Figure 1).

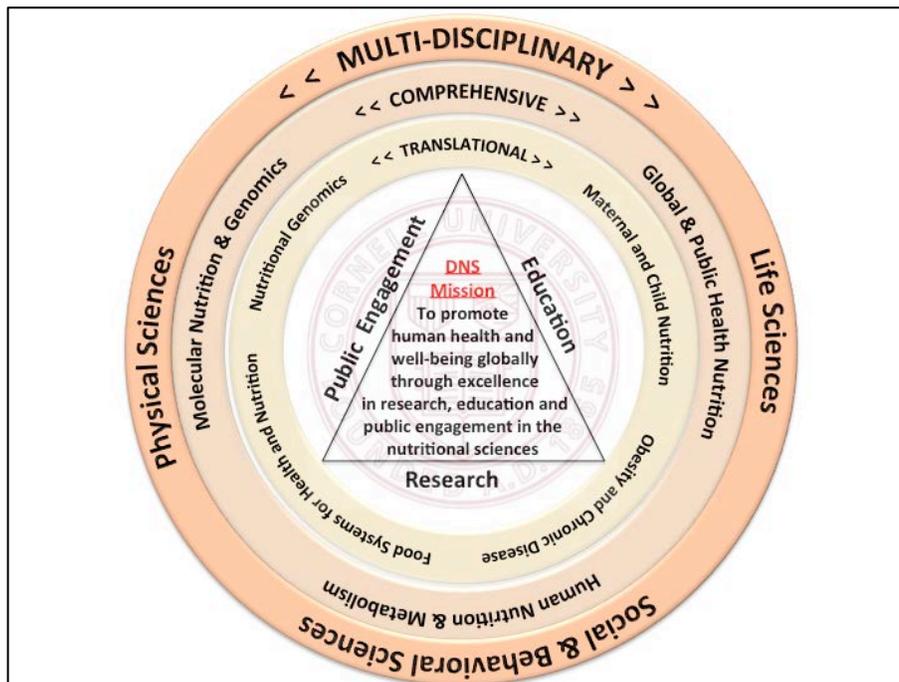


Figure 1. Diagram to illustrate the overlapping structure of the areas of research, education and public engagement in the Division of Nutritional Sciences (DNS) at Cornell University and the context in which they are expected to operate. The Division emphasizes its commitment to maintaining a *multidisciplinary* foundation, *comprehensive* approach to the nutritional sciences, and its emphasis in *translation* in key signature areas to enable programmatic collaboration and integration.

To fulfill these missions, the DNS recognizes that the academic field of nutrition is *multidisciplinary* at its foundation through its integration of scientific knowledge across

the physical sciences, life sciences and social & behavioral sciences (Figure 1). The Nutritional Sciences embrace theories and methods across many academic disciplines to understand the complex relationships among human health, nutritional status, human genetics, food and lifestyle patterns, social and institutional environments and governmental policies. Understanding these relationships necessitates the study of: human metabolic regulation and function of nutrients, influence of genetic/epigenetic variation on nutrient function, the role of nutrients in genome programming, nutrient requirements through the life span, role of diet in reducing risk of disease, nutritional quality of foods, the relationships among food/agriculture systems and health, and interventions and policies designed to promote nutritional health and well-being of individuals and populations. Scholarly activities across the disciplinary spectrum are undertaken in both developed and less developed countries. They address causes and consequences of inadequate or inappropriate nutrition resulting from both over- and under-consumption of food and nutrients. This multidisciplinary nature of the DNS is also manifested in its placement within the organizational structure at Cornell as it bridges the CALS and the CHE. These two colleges represent two important forces in our society: agriculture and human ecology, respectively. Expertise across this interface is required to address many of the most pressing nutritional problems facing individuals, societies and governments.

The DNS at Cornell University is a *comprehensive* Human Nutrition program. The DNS graduate training programs are organized loosely along three major domains of scholarship that reflect the integration of the field of nutrition from the level of the molecule to that of populations. The **three areas** are: Molecular Nutrition and Genomics, which uses tools and paradigms from the life and physical sciences to address questions in nutrition at the molecular, cellular and organism model levels of biological organization; Human Metabolism and Nutrition, which examines human metabolism and physiology through clinical studies with human volunteers and through observational studies in human populations; and Global and Public Health Nutrition, which draws heavily from methods and theories in the social and behavioral sciences with an objective to promote more efficient and effective community and public health interventions and inform public policy both nationally and globally. Scholarly activities engaged by DNS faculty are not easily represented by any one of these subdivisions. Many faculty members work at the areas of interface among disciplines and view their research as integrating the field of nutrition.

The DNS program embraces *translational* approaches to integrate its primary missions in *research, education* and *public engagement* through programmatic foci that cut across the range of disciplinary integration and include: *Maternal and Child Nutrition, Obesity and Chronic Disease, Nutritional Genomics, and Food Systems for Health and Nutrition* (Figure 1). These problem-oriented themes serve to foster multidisciplinary research and teaching collaborations, extramurally-funded training programs, help identify gaps in knowledge for new discovery-driven research (reverse translation) and provide a more rapid development of novel intervention and outreach strategies. Individual faculty research programs often span across these programmatic foci. Faculty

members in DNS demonstrate leadership and visibility, or emerging leadership in their discipline, and advance the field of nutritional sciences. DNS faculty members and graduate students are also engaged in the translation of nutrition research to policy and practice, as well as research focused on the development of evidenced-based nutrition policy and practice. DNS has a long-standing presence and historical commitment to research focused on policy development for both domestic and global constituencies, supported by distinguished endowed faculty chairs. Additionally, virtually all faculty members contribute to policy and practice through their participation and leadership of expert committees through the national academies, various professional societies and the United Nations.

The **undergraduate program** has 686 students in four majors: the major in Nutritional Sciences is offered to 83 students through the College of Human Ecology, and to 115 students through the College of Agriculture and Life Sciences. The Human Biology, Health, & Society major is offered through the College of Human Ecology and has 425 majors. The Division's new major in Global Public Health Sciences, offered for the first time in the 2014-15 academic-year has 15 majors; enrollment in 2014-15 was limited. A minor in Global Health is offered and currently has 85 students completing the requirements. One hundred and twenty-five students are enrolled in NS2600, the new gateway course required for entry into the new major or existing Global Health minor. Fifty-one students are enrolled in the Nutrition Program of Study in the cross-college Biological Science major.

Graduate study is administered through the Field of Nutrition, which includes 47 faculty members throughout the university. Currently, there are 74 graduate students in the Field of Nutrition. DNS faculty with membership in the Graduate Field of Nutrition also hold appointments in 21 other graduate fields reflecting the diversity in primary disciplines of the faculty and increasing the number of graduate students working in the Division of Nutritional Sciences far beyond 74.

The Division currently has **73 academic faculty** members with 33 holding primary tenure track professorial appointments. These include 19 full professors, 7 associate professors, and 7 assistant professors. Eight faculty members in these lines are currently untenured. The DNS faculty also includes senior research associates, research scientists, research associates, senior lecturers, lecturers, senior extension associates and extension associates. The faculty ranks are further enriched by 6 active emeritus faculty members who participate in a variety of division and university activities. Two full professors have a joint appointment in DNS while holding a primary faculty appointment in another Cornell department. Two adjunct faculty members are actively involved in DNS research programs while maintaining primary academic affiliations with institutions elsewhere. The Division has a robust postdoctoral research training program with 21 individuals currently working with DNS faculty. Two of these postdocs are committed to

advanced teaching instruction in the Division and committed to participating in Cornell's Center for Teaching Excellence program to further prepare them for academic careers.

Extension faculty and staff in DNS lead applied research and educational interventions aimed at the goal of "optimally nourished people in food secure communities." They do this work in collaboration with a network of professional educators, paraprofessionals and volunteers in Cornell Cooperative Extension programs in 57 counties and New York City. The DNS Extension mission is realized through development and evaluation of community-based interventions that promote positive nutrition practices, encourage appropriate use of personal and environmental resources, ensure access to nutritious and safe food, and foster nutritionally supportive communities.

DNS also administers two **dietetics education programs** accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition. Both have a long and distinguished history. The Division's mission is to prepare future leaders for evidence-based practice in community, clinical and management settings and in translational research to inform that practice. The Cornell Didactic Program in Dietetics (DPD) produces approximately 35 graduates qualified to apply for a dietetic internship. Our highly competitive Dietetics Internship is accredited for 10 interns; at least one of these internships positions is reserved each year for our unique RD/PhD training program. These interns must simultaneously apply to, and be accepted to, both the DNS DI and PhD programs.

DNS further supports its missions by offering **The Cornell University Division of Nutritional Sciences Post-baccalaureate Certificate Program in Health Studies**. This intensive two-semester, nutrition-centered, 32-credit program was carefully designed to meet the expectations of professional school admissions. The program is currently limited to 20 students who receive very individualized instruction and experiences to ensure their future success.