

Nutrition and Health Sciences



EMORY

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GRADUATE
S C H O O L



Emory's strongly interdisciplinary doctoral program in Nutrition and Health Sciences (NHS) provides the expertise and skills necessary for original research into the relationship between nutrition and human health.

Nutritional science is an increasingly prominent aspect of biomedical science as well as public health programs and policies. Nutrition focuses on foods and nutrients—the composition of foods, the determinants and patterns of food consumption, the relation of foods consumed to physiological needs, and the fate of the nutrients in biochemical processes. Nutritional science investigates these phenomena on many levels, ranging from biochemical processes on the molecular level to population-level determinants of nutrition in the context of social environments.

Nutrition is the quintessential translational science, in which discovery, development, and delivery intersect. Advances in the understanding of biochemical processes change the management of clinical disease and public health programs; clinical observations drive future research into the mechanisms of pathophysiology and disease progression; and the need for effective public health programs leads to research on behavior modification and the social processes that influence dietary habits.

Integrative Perspective

The NHS program integrates three perspectives on nutrition: biochemical, clinical, and population. The biochemical level considers how nutrients participate in biochemical processes on the molecular level and affect processes such as gene expression. The clinical level is concerned with the impact of nutrition on individuals' metabolism and health, and with the role of nutrition in treating and managing disease. At the population level, nutrition science focuses on epidemiologic studies of diet and health, on the determinants of dietary practices, and on community-based interventions to affect nutrition and improve health on a national and international level.

The NHS program is committed to a curriculum and to research that addresses important questions about nutrition and human health that involve the interface among these perspectives.

DISCOVER

the unexpected

Research Community

The integration of these perspectives is made possible in part by a concentration of facilities and resources that promotes a genuine community of researchers.

- The NHS program is located on the main campus of Emory University, in the biomedical sciences complex which consists of the Rollins School of Public Health, the School of Medicine, and the Woodruff School of Nursing.
- Nearby facilities include the Emory University General Clinical Research Center with its metabolic ward, the Emory Hospital, and the Winship Cancer Institute.
- The U.S. Centers for Disease Control and Prevention is adjacent to the Emory campus, and the headquarters of the American Cancer Society is in the city of Atlanta.

Researchers from these institutions often collaborate on projects around issues of nutrition and human health.

Seminar Series

Weekly student seminars provide congenial environments to present research findings or a recent journal paper of interest.

In conjunction with the Emory Center for Clinical and Molecular Nutrition, the NHS program hosts regular seminars designed to keep students as well as faculty in touch with new and advanced research, presented by faculty members and by visitors from around the U.S. and the world. Additional seminars are hosted by the Hubert Department of Global Health, the Department of Anthropology, the Center for Health, Culture and Society, and other groups.

Recent seminars have included:

- Birth Month and Risk of Diabetes: Accumulating Evidence that Might Implicate Vitamin D; Henry Kahn, CDC
- Arginine Metabolism in Health, Aging and Disease; Nicolaas Deutz, University of Arkansas for Medical Sciences
- Effects of Sugar Sweetened Beverages in the Liver; Ina Berheim, University of Hohenheim
- Vitamin D as a Defensin; John S. Adams, UCLA
- Chronic Alcohol Abuse: Thiol Depletion and Risk of Acute Lung Injury; Louann Brown, Emory University
- Diabetes — From Genes to Prevention; Venkat Narayan, Emory University
- Iodine Metabolism and Nutrition; Elizabeth Pearce, Boston University
- Leptins; Mark Hamrick, Medical College of Georgia

Faculty

Program faculty come from Emory—from the social and biomedical science departments, and the schools of medicine and public health—as well as from the U.S. Centers for Disease Control & Prevention and the American Cancer Society. They represent a range of disciplines—Anthropology, Endocrinology, Surgery, Human Genetics, Epidemiology, and many more.

The program is part of the Graduate Division of Biological and Biomedical Sciences and enjoys close working relationships with students and faculty in the Division's other programs (see final page).

In a recent survey of faculty productivity by the Chronicle of Higher Education, the faculty of the NHS program were ranked 4th in the country among nutrition programs. A full listing of our faculty is available on our website. A few examples to highlight the breadth of opportunities at Emory:

USHA RAMAKRISHNAN, Associate Professor in the Hubert Department of Global Health, studies micronutrient nutrition in women and young children. She directs a randomized controlled trial of the impact of docosahexaenoic acid supplementation in pregnancy on offspring cognitive development. The author of over 70 papers, she received the prestigious Norman S. Kretschmer Award for Young Investigators from the American Society of Nutritional Sciences in 2003.

REYNALDO MARTORELL is Woodruff Professor of International Nutrition and Chair, Hubert Department of Global Health. He is world-renowned for his seminal work on child nutrition and growth, and on the long-term consequences for physical health and economic productivity of improvements in maternal and child nutrition. He is a member of the U.S. Institute of Medicine and the author of close to 200 papers.

THOMAS R. ZIEGLER, Professor of Medicine in the Division of Endocrinology, Metabolism and Lipids, serves as Associate Program Director of the Emory General Clinical Research Center and is Director of the Emory Center for Clinical and Molecular Nutrition. He is a past president of the American Society for Clinical Nutrition. His clinical and translational research, published in over 75 papers, focuses on the gut in health and disease, using cell, human, and animal models.

Students

The NHS program welcomes applications from individuals with science-based undergraduate degrees, and highly values graduate training in nutrition/dietetics, biological sciences, public health or a related field. Applicants with other backgrounds should contact the recruitment coordinator to discuss the appropriateness of the program.

Our program has a relatively small and close-knit student community. Generally, 25 – 30 students are enrolled at any one time, with 4 – 6 students entering the program each year.

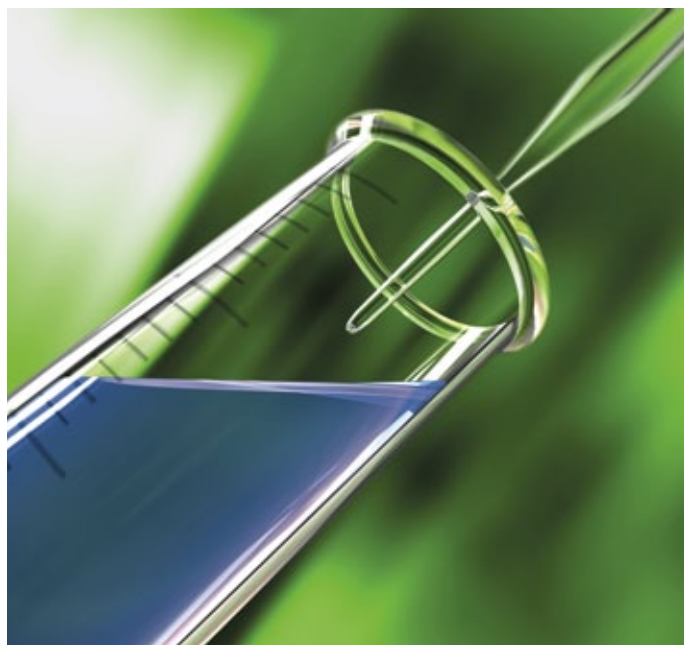
Our website has information about all our current students, including research projects. Here is a sample of recent dissertation projects:

- Obesity and cardio-metabolic risk factors in preschool children beneficiaries of the Chilean National Nursery School Council Program (JUNJI)
- Association of physical activity and television viewing with various domains of child and adolescent health.
- The relationship between parity and overweight among women of low and middle income countries
- Mechanism and regulation of phosphatidylserine and phosphatidylcholine flip-flop across the plasma membrane of yeast
- Strategies to improve efficacy of specialized nutrition support in adults
- Treatment of Vitamin D deficiency in special conditions: hypertension and cystic fibrosis

Graduates of the NHS program work in academia, government, and the private sector. Recent graduates have successfully competed for faculty positions at Georgia State University and post-doc positions at Harvard University and the University of Toronto, have entered the Epidemic Intelligence Service of the CDC and moved from there into professional positions at that agency, are responsible for research portfolios at the NIH, and are working as science writers.

Curriculum

Students usually complete the program in 5 or 6 years, though students who arrive with an advanced degree (MS, MPH, etc.) may complete it in a shorter time.



The curriculum is designed to develop a sound basis of knowledge in nutritional science, a deep expertise in a specialty, strong research skills, and the ability to integrate their specialty and research with other areas in nutritional science.

- All students take a year-long core curriculum in nutrition and metabolism, epidemiology, and biostatistics. Additional coursework can provide subspecialty focus. At the end of the year, students take a comprehensive master's equivalency exam.
- During the second year and beyond, students continue to participate in the NHS graduate student seminar, and develop a customized set of electives designed to prepare students for dissertation research.
- Starting in the second semester of the first year, students participate in lab rotations. These are opportunities to participate in active research projects in different areas, as well as to become acquainted with faculty members who may become mentors and advisors. Each student completes at least three lab rotations.
- Students are encouraged to develop their own projects within the labs, and to present or publish the results. Such projects often form the basis for research seminars where students participate as speakers and discussants.
- Students prepare an original research proposal in the form of a NIH or NSF research grant application, which is then critiqued by the student's thesis committee. This proposal usually forms the basis for the dissertation research.

By the end of the third year, students are expected to have completed all program requirements except the dissertation.

Our website has lists of specific required courses, electives in NHS and other programs, and much more.

Training in Teaching

Scientists are often also teachers, whether in formal education or in the process of presenting to lay persons. At Emory, all doctoral students receive training in pedagogy and other elements of teaching, through the Teaching Assistant Training and Teaching Opportunity Program (TATTO) administered by the Graduate School.

After a brief summer workshop (usually before the second year), students are assigned by the Graduate Division of Biological and Biomedical Sciences to assist a faculty member as a lecturer, laboratory instructor or discussion leader for one semester. The Graduate Division offers additional TATTO courses, as well as additional teaching opportunities.

Prospective applicants should contact the NHS recruiter, Dr. Vin Tangpricha, at vin.tangpricha@emory.edu

About the GDBBS

Emory University is one of the major biological research and medical referral centers in the Southeast and is among the fastest growing Medical Centers in the United States. Emory is consistently ranked in the top 20 institutions nationally for NIH research support. Emory was recently named one of the 25 “New Ivies” by *Newsweek*, a testament to its quality and dedication to education.

The Graduate Division of Biological and Biomedical Sciences (GDBBS) has over 460 graduate students in eight interdisciplinary Ph.D. programs:

- Biochemistry, Cell and Developmental Biology
- Genetics and Molecular Biology
- Immunology and Molecular Pathogenesis
- Microbiology and Molecular Genetics
- Molecular and Systems Pharmacology
- Neuroscience
- Nutrition and Health Sciences
- Population Biology, Ecology and Evolution

Over 330 world-renowned researchers mentor students admitted to these programs, giving them a unique opportunity to train with faculty at:

- the American Cancer Society
- the U.S. Centers for Disease Control and Prevention
- Emory College
- the Robert W. Woodruff Health Sciences Center
- the Rollins School of Public Health
- The Carter Center
- the Winship Cancer Institute
- the Yerkes National Primate Research Center

Financial support includes a tuition scholarship, health insurance and stipend (\$24,500 for the 2009 – 2010 academic year). Funding is guaranteed as long as the student is making satisfactory progress toward their degree. The average time to degree is about 5.5 years. Training is interdisciplinary and students have the flexibility to work with GDBBS faculty outside their program. Students typically perform three rotations before affiliating with a faculty member for their dissertation research.

The application deadline is January 3rd for the following fall semester.



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Requests for Additional Information:

RECRUITMENT AND ADMISSIONS

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