"I see that I can make a difference, contribute to improving health in my own country."

SWAPNIL RAJPATHAK
Doctoral student, Departments of Nutrition and Epidemiology

"People still focus on undernutrition in the developing world," says Swapnil Rajpathak, "but in urban India obesity and diabetes are much bigger concerns." Estimating the prevalence of diabetes in urban India at a startling 10 percent, he attributes the problem to a newfound preference for fast food over a more healthful traditional diet.

While a resident at the All India Institute of Diabetes, Swapnil grew interested in public health approaches to obesity and diabetes. In 1999 he came to the United States to do an MPH in epidemiology at George Washington University in Washington, DC. During this period he was also a research intern for the Program on Noncommunicable Diseases at the Pan American Health Organization.

Swapnil decided to apply to a doctoral program in nutrition and epidemiology at HSPH. He began his studies in 2001 and has been working with Dr. Frank Hu on the Health Professionals Follow-up Study. Swapnil's own research has focused on the relationship between minerals—specifically chromium and calcium—and the risk of diabetes, heart disease, and obesity. "On a personal level," he says, "the greatest thing about my experience has been the respect with which I've been treated by the faculty."

Swapnil hopes to graduate in 2005, then stay at the school for a postdoctoral fellowship. Eventually he wants to return to India to apply what he has learned. "I see that I can make a difference, contribute to improving health in my own country."

DEPARTMENT OF NUTRITION

THE MISSION OF THE DEPARTMENT of Nutrition is to improve human health through enhanced nutrition. The department strives to accomplish this goal through research aimed at improved understanding of how diet influences health, the dissemination of new knowledge about nutrition to health professionals and the public, the development of nutritional strategies, and the education of researchers and practitioners.

The Department of Nutrition provides training and research opportunities in basic science relating to nutrition and in epidemiologic aspects of nutrition as they affect public health. Nutrition policy and the evaluation of nutritional interventions are long-standing interests of the department, particularly as they concern the populations of Latin America, Africa, Asia, and the United States. Department research ranges from molecular biology to human studies of cancer and heart disease, including the conduct of population-based intervention trials. Students learn and use the latest techniques in biochemistry, physiology, biostatistics, epidemiology, and related fields. Departmental research, whether basic or applied, is relevant to human health.

Current research covers a wide range of topics, including large prospective studies of dietary factors in relation to heart disease, cancer, diabetes, and ophthalmologic disease; development of methods to assess nutritional status by analysis of body tissue; the interaction of nutritional factors with genetic determinants of disease; the interaction of nutritional factors and infectious agents; nutritional influence on blood pressure; effects of nutrition programs on the mental and physical consequences of malnutrition; nutritional determinants of blood lipid factors; lipoprotein metabolism; molecular mechanisms of diabetes and obesity; regulation of the intra- and intercellular delivery of macromolecular nutrients; and the molecular mechanism leading to atherosclerosis and thrombosis.

Degree Programs in Nutrition

As described below, the department offers two doctoral programs. The first is a program leading to the doctor of science (SD) or doctor of public health (DPH) degree in nutrition, with concentrations in either nutritional epidemiology or public health nutrition. The second is a doctor of philosophy (PhD) program in biological sciences in public health (nutritional biochemistry/cardiovascular biology). Applicants to the PhD program who hold a clinical degree in medicine, veterinary medicine, or dentistry may prefer to follow a different curriculum leading to the SD degree in nutritional biochemistry. This option may be available by special arrangement with the department. No master's degree programs are available.

Doctor of Science in Nutrition/Doctor of Public Health

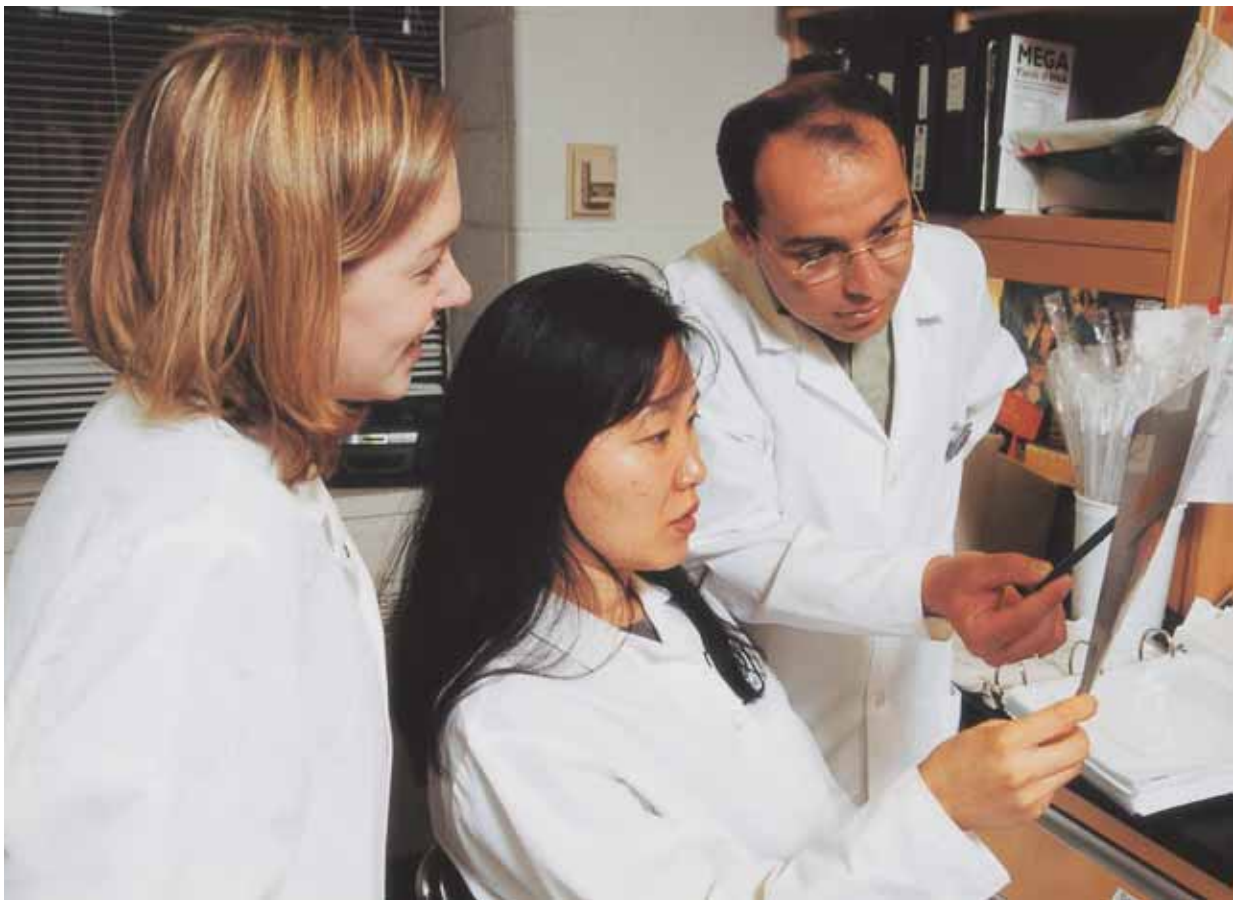
The concentration in nutritional epidemiology or in public health nutrition, leading to the SD or DPH degree, provides rigorous training in epidemiology and biostatistics as well as the biological aspects of nutrition. The overall objective of the nutritional epidemiology concentration is to enable students to investigate relationships between diet and disease. Students in public health nutrition combine behavioral sciences with biologic and quantitative approaches to design and evaluate nutrition programs, policies, and the dissemination of nutrition research.

Graduates are prepared for careers as research scientists in academic institutions, private-sector organizations, and public health agencies in state, national, and international settings. Recent graduates are now working at universities, research foundations, pharmaceutical companies, the National Cancer Institute, and the American Cancer Society.

Applicants must have a strong background in biology and mathematics. An MD or other professional health-related degree is desirable but not required. Applicants to the DPH program must hold an MPH and a prior doctoral degree.

For the nutritional epidemiology concentration, one of the two required minors must be in epidemiology; for the public health nutrition concentration, students complete one minor in quantitative methods (biostatistics or epidemiology) and one minor in a behavioral science relevant to the development of public health programs and policies (for example, society, human development, and health). For more information on schoolwide requirements for doctoral degrees, see page 58.

Admission to a joint program with the Department of Epidemiology requires the approval of both departments, and applicants should contact the Department of Nutrition before making formal application. All students in a joint program with Epidemiology must satisfy the



COURSES OF INSTRUCTION

Please note that courses listed are subject to change and some are not offered every year. Complete course descriptions are available at http://www.hsph.harvard.edu/registrar/courses.

Nutritional Epidemiology

Programs and Principles of Public Health Nutrition

Principles of Nutrition

Science of Human Nutrition

Nutrition Seminars I and II

Advanced Topics in Nutrition I and II

Seminars in Food Science and Technology

Nutritional Problems of Less-Developed Countries

Research Techniques in Nutritional Biochemistry

Nutrition/Health Promotion in the Mass Media

Independent Study, Tutorials

major requirements of both departments, complete a minor acceptable to both, and write a thesis on a topic concerning both nutrition and epidemiology.

For the SD and DPH programs, funding may be available through the NIH-supported Training Program in Nutritional Science for students with previous doctoral degrees.

Doctor of Philosophy in Biological Sciences in Public Health (Nutritional Biochemistry/Cardiovascular Biology)

Students wishing to study cellular and molecular biology or physiology as it pertains to major problems in public health should apply to the PhD program offered by the Division of Biological Sciences through the Harvard University Graduate School of Arts and Sciences. The PhD program in nutritional biochemistry offers rigorous training in biochemistry, cell biology, and metabolism, allowing students to work toward solving nutritional and metabolic problems in the laboratory. Students in cardiovascular biology learn to use cutting-edge technologies from molecular biology, biochemistry, and genetics to critically dissect the mechanisms underlying cardiovascular diseases such as heart attacks, strokes, heart failure, atherosclerosis, and congenital heart disease. For more information about the PhD program, see page 55.

Related Offerings

Interdisciplinary concentration in genetic and molecular epidemiology, see page 56.
Interdisciplinary concentration in the epidemiology of infectious disease, see page 56.
MPH concentration in family and community health, see page 52.
Nutritional epidemiology area of interest, Department of Epidemiology, see page 19.

Contact Information

For more information about research and training in nutrition, please contact Kathy McLoughlin, Department of Nutrition, 655 Huntington Avenue, Boston, MA 02115.
Phone: 617-432-1851
Fax: 617-432-2435
Email: nutrition@hsph.harvard.edu

DEPARTMENT FACULTY

Please note that some faculty members may be on leave during academic year 2004–05.

Department chair: Walter C. Willett, MD, MPH, DPH; Fredrick John Stare Professor of Epidemiology and Nutrition. Investigation of dietary factors, using epidemiological methods, in the cause and prevention of cardiovascular and other diseases.

Alberto Ascherio, MD, MPH, DPH; Associate Professor of Nutrition and Epidemiology. Relation of dietary factors to cardiovascular and neurological diseases; nutritional epidemiology of multiple sclerosis and Parkinson's disease.

Hannia Campos, MS, PhD; Associate Professor of Nutrition. Dietary and genetic factors affecting lipoprotein metabolism and heart disease in humans; biochemical markers of dietary intake.

Wafaie W. Fawzi, MB, BS, MPH, SM, DPH; Associate Professor of Nutrition and Epidemiology. Etiologies of infectious diseases and perinatal conditions with emphasis on dietary and nutritional causes; dietary factors in disease in pregnancy and childhood.

Edward L. Giovannucci, MD, MPH, SD; Professor of Nutrition and Epidemiology. Etiologies of cancer with emphasis on dietary causes; methodologies to measure dietary factors in epidemiologic studies.

Gökhan S. Hotamisligil, MD, PhD; James Stevens Simmons Professor of Genetics and Metabolism. Molecular basis of metabolic diseases; studies on regulatory pathways; signal transduction in mammalian cells; biology of fatty-acid binding proteins.

Frank B. Hu, MD, MPH, PhD; Associate Professor of Nutrition and Epidemiology. Diet and physical activity in relation to cardiovascular disease and type-2 diabetes; role of diet and lifestyle in preventing macrovascular complications in diabetics.

David J. Hunter, MB, BS, MPH, SD; Professor of Epidemiology and Nutrition. Cancer epidemiology; molecular and genetic epidemiology.

Karen E. Peterson, RD, SD; Associate Professor of Nutrition and Society, Human Development, and Health. Nutrition and activity surveillance systems and interventions in low-income, multiethnic populations; methodological issues affecting interpretation of growth and nutrition indicators.

Eric B. Rimm, SD; Associate Professor of Epidemiology and Nutrition. Relation of diet to diseases, especially obesity, diabetes, and cardiovascular disease; impact of antioxidants, B vitamins, fiber, and alcohol on serum and genetic markers.

Frank M. Sacks, MD; Professor of Cardiovascular Disease Prevention. Human lipoprotein metabolism; effects of diet and hormones; dietary fatty acids and cardiovascular disease.

Stephanie A. Smith-Warner, MS, PhD; Assistant Professor of Nutritional Epidemiology. Examination of dietary factors in relation to cancer risk; evaluation of dietary assessment methods.

Meir J. Stampfer, MD, MPH, DPH; Professor of Nutrition and Epidemiology. Influence of diet and exogenous hormones on health, particularly heart disease and cancer.

Marianne Wessling-Resnick, MS, PhD; Professor of Nutritional Biochemistry. Regulation of the cellular uptake of macromolecular nutrients; molecular basis of iron transport.

Secondary Appointments

(primary appointments at Harvard Medical School)

Christopher P. Duggan, MD, MPH; Assistant Professor in the Department of Nutrition. Oral rehydration solutions for acute diarrhea; nutritional requirements of catabolic patients; micronutrient needs in infectious and critical illness.

Mathew W. Gillman, MD, SM; Associate Professor in the Department of Nutrition. Relationship of diet to chronic conditions and diseases; early origins and early-life prevention of adult chronic diseases; disease prevention in defined populations.

Clifford W. Lo, MD, MPH, ScD; Assistant Professor in the Department of Nutrition. Vitamin D and calcium nutrition; total parenteral nutrition.

W. Allan Walker, MD; Professor in the Department of Nutrition. Nutrition and developmental gastroenterology; nutrition and mucosal immunology; gastrointestinal immunology; protective functions of breast milk.

Adjunct Faculty

Teresa T. Fung, MS, SD. Simmons College.

Guy L. Reed III, MS, MD. Medical College of Georgia.