

NUTRI NEWS

Department of Nutrition, Harvard School of Public Health

Fall 2013

Hilary Farmer, Editor

NUTRITION DEPARTMENT WELCOMES NEW INCOMING STUDENTS

Amelia Marsh, Academic Coordinator

This year eight new students from across the globe who possess a wide variety of backgrounds have joined our Nutrition Department. These eight men and women hail from places as far away as the Middle East, Africa, Asia, and Europe, and as close as Mexico and the US. Although their backgrounds may differ widely, one thing they do share in common is the fact that they are a very interesting and talented group of students who have come to Harvard with a strong personal vision for shaping the future of world nutrition and global health. Let's welcome all of them to the Department!

Ahmed Alhassani, who is originally from Saudi Arabia, will be concentrating on Nutritional Epidemiology under the direction of **Dr. Frank Hu**. Ahmed received his Bachelor's degree in Dental Medicine and Surgery (BDS) from King Abdulaziz University (KAU), Jeddah, Saudi Arabia, in 2005. He has worked as a general dentist in the Saudi National Guard, as well as a clinical instructor at the School of Dentistry (KAU). Ahmed was also awarded a postdoctoral scholarship, received a Certificate of Advanced Education in Periodontology, and an MS degree from Tufts University School of Dental Medicine, Boston, MA. A diplomat for the American Board of Periodontology, Ahmed's research interests have concentrated on nutritional intake and chronic illnesses, especially diabetes, and the relationship between oral and systemic health.

Andres Ardisson is a first-year ScD student in the Nutrition Department whose concentration will be in Nutritional Epidemiology. His research interests will focus primarily on dietary risk factors for chronic disease. Prior to coming to HSPH, Andres spent over a decade working in Research & Development in the food industry, creating new technologies to incorporate fiber and whole grains in food products and developing solutions for sodium reduction and the elimination of trans fats in a variety of food products.

Andres received his MS degree in Food Science from Cornell University, and his BS in Food Science and Technology in Mexico. He has lived and worked in Mexico, Belgium, and Chile and enjoys cooking, running and windsurfing.

April Bowling is an incoming Public Health Nutrition doctoral student, and is a seasoned public health professional. From training endurance athletes to directing a family-centered health and wellness program, she advocates for families to make healthy decisions around their nutrition and physical activity. April earned her Bachelor's degree in Earth and Environmental Science at Johns Hopkins University, and her Master's degree at Tufts University in Urban and Environmental Policy, (cont'd next page)

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after which she began a career in public health protection at the Massachusetts Department of Environmental Protection (MADEP). During her time at MADEP she first worked in drinking water protection, and later on broader policy issues in her capacity as Deputy Chief of Staff.

April's research interests include mitigation of pediatric allostatic load and associated brain development through nutrition and exercise; the development of effective, scalable methods to reach family decision-makers and gain their investment in health and wellness program participation; examining the role of mental skills training and leveraging social networks in promoting nutritional improvements and exercise adherence; examining the declining role of free play in children's lives; and the development of public policies that systemically encourage and support proper nutrition and activity choices for parents and children.

Yu-Han Chiu is a first year doctoral student in the Nutrition Department and will work under the direction of ***Dr. Jorge Chavarro***. After having lived in Boston for the past year Yu-Han was able to receive an MPH degree at HSPH in May of 2013. Prior to her time at HSPH, she worked at a hospital as a general physician for one year after graduation from medical school in Taiwan.

Yu-Han's research interests will focus on diet and reproductive outcomes. Following her time in the Department of Nutrition, Yu-Han intends to establish herself as a researcher in academia and lead nutrition-related studies on infertility, and to forge research relationships between Taiwan and the United States. She is very happy to be part of member in the Nutrition Department and cannot wait to meet others in the department!

Selma Gicevic comes to us from Bosnia. Her background lies in social sciences, communications, marketing and public health nutrition. Selma attended the University of

Sarajevo for her BA, where she studied in the Faculty of Political Sciences. After graduating, Selma attended the Chartered Institute of Marketing CIM. While there she focused on marketing communications, then later went to the University of Westminster, London, UK, where she received her BSc in Public Health Nutrition. Back in Bosnia and Herzegovina, Selma worked with the National Ministries of Health and Education, public health institutes, and UNICEF on developing the national child nutrition policy, as well as dietary guidelines for preschool settings, and with public kindergartens on improving food provision. She is also one of the founders of the Bosnian Association of the Study of Obesity BHASO (country member to-be of IASO).

Selma's research interests lie around interventions that could help reverse the obesity wheel; in particular, the development of dietary habits in childhood, factors influencing parental food choice, policy interventions, and, since she arrived in the USA, the phenomenon of "urban food deserts". Now she would like to further investigate the role of built environment as well as cultural differences in making food choices/actual food intake among different family profiles in the US. Her plans after graduation include helping to set up an academic program in nutrition at the University of Sarajevo.

Nathalie Marchand. Prior to beginning her studies in our ScD program in Nutritional Epidemiology, Nathalie received her Master's degree in Nutrition from Columbia University where she was able to perform research for her thesis on the relationship between glycemic load and all-cause mortality at the Taub Institute for Research of Alzheimer's Disease and the Aging Brain. As Founder of the Million Hearts Nutrition Club at Columbia, Natalie brought together students from several disciplines within the medical center to purposefully integrate nutrition into the dialogue used in preventing heart attack and

stroke, in line with the CDC's Million Hearts Initiative. She has worked as a Nutrition Educator in New York City for non-profit organizations, such as City Harvest, in order to bring knowledge about healthy eating to mothers and children in underserved, food-desert areas of the community. Natalie looks forward to researching the relationships between nutrition and the chronic diseases of aging while at the Harvard School of Public Health, with a specific goal of preventing cognitive decline, Alzheimer's disease and dementia through her work. Nathalie received her BA in Art History from Wellesley College, and while an undergraduate student she performed AIDS research at the Dana Farber Cancer Institute.

Ramadhani Abdallah Noor is a physician with a background in public health from the Harvard School of Public Health (HSPH) and London School of Hygiene and Tropical Medicine (LSHTM). Noor is an internationally certified CRA of the Association of Clinical Research Professionals (ACRP, USA). By working as a coordinator and manager of various integrated projects that focus on health research, Noor has acquired the capacity and capabilities to manage tightly regulated multi-centered international trials in Africa. Noor has also worked as a research physician with a number of Harvard collaborative micronutrient supplementation studies in Tanzania. Prior to starting his doctoral program here, he had been working as a research associate with the Department of Nutrition, then the Department of Global Health and Population at HSPH. Noor has also previously coordinated a number of malaria vaccine studies through the African Malaria Network Trust (AMANET) and the European Malaria Vaccine Development Association (EMVDA) in collaboration with various malaria vaccine research teams in Africa. He has developed strong experience in

product development, large randomized trials/interventional studies, capacity building for research teams, regulatory review, compliance and oversight in research involving human subjects. His experience is in nutrition, malaria, vaccinology, and HIV-related intervention research.

Alvin Tran joins our Public Health Nutrition doctoral program after having completed a yearlong fellowship in Health Policy Reporting for Kaiser Health News and the Kaiser Family Foundation in Washington, DC. He earned his Bachelor of Science in Public Health from the University of Washington, and his Master of Public Health in Behavioral Sciences and Health Education at the Rollins School of Public Health at Emory University. As a graduate student at Emory, Alvin worked as a research assistant for the Centers for Disease Control and Prevention's Division of Healthcare Quality Promotion where he analyzed state-level infection control policies of assisted living facilities. He also interned for the Emory School of Medicine's Division of Human Genetics where he assisted in developing evidence and consensus-based nutrition management guidelines for inherited metabolic disorders.

Alvin's research interests include exploring the socio-contextual factors that influence individuals' lifestyle behaviors, and the role of health interventions that aim to improve dietary habits, especially among school-aged children and young adults. He is also interested in health communication and policy. Alvin recently had a front page article on Obamacare that he had written published in the *Washington Post*! (See http://www.washingtonpost.com/national/health-science/expert-responses-to-commonly-asked-questions-about-the-individual-mandate/2013/09/30/b46ac5e2-2538-11e3-b75d-5b7f66349852_story.html).

Congratulations, Alvin!



OUR GLOBAL NUTRITIONAL AND EPIDEMIOLOGIC TRANSITION STAYS BUSY WITH MANY PROJECTS!

by Vasanti Malik, Research Associate



The Global Nutritional and Epidemiologic Transition (GNET) Initiative is a collaborative multi-country project launched by researchers from the Departments of Nutrition and Epidemiology at HSPH, with the goal of preventing the global diabetes epidemic by improving the carbohydrate quality of staple foods in countries across various stages of the epidemiologic transition.

Projects are underway in 10 countries across the globe, to assess the effect of substituting whole grains and legumes for refined carbohydrate staples on intermediate markers of diabetes risk, as well as to assess the cultural acceptability and feasibility of consuming the intervention foods using taste tests and focus groups.

GNET is a major undertaking that is led by a dedicated team at HSPH. **Walter Willett, Frank Hu, Donna Spiegelman** and **Hannia Campos** comprise the Executive Committee, which provides overall guidance and leadership to the project. The Steering Committee, which includes **Vasanti Malik, Josiemer Mattei, Nicole Wedick** and **Hannia Campos** provides hands-on guidance to collaborators at individual sites and oversees project development and implementation. The Steering Committee also leads bi-monthly conference calls among all GNET investigators (across many time

zones!) to discuss study progress. Vasanti Malik, a research associate in the department oversees projects in Nigeria, Kuwait, Malaysia, Kenya, India and Tanzania. Nicole Wedick, a former post doc in the department, now a research fellow at University of Massachusetts Medical School, works on projects in India and Tanzania. Josiemer Mattei, a faculty member in the department, manages projects in Puerto Rico and Mexico; while Hannia Campos, a faculty member in the department, conducts

studies in Costa Rica. Donna Spiegelman, a professor in epidemiology and biostatistics, provides statistical expertise along with Biling Hong, a statistician in the Department of Epidemiology. **Alan Berkeley**, from the

Department of Epidemiology, is GNET's administrative coordinator.

In November 2011, the Department of Nutrition hosted a symposium that focused on the Nutrition Transition and Global Burden of Diabetes, which featured expert speakers and workshops and brought investigators together from study sites around the world to meet face to face. The main themes emerging from the symposium were published in the *British Journal of Nutrition* in 2012. The symposium was sponsored by an unrestricted grant from Bristol-Myers Squibb. GNET projects have been funded from a variety of



sources, including a National Institutes of Health-Fogarty award, private foundation awards and departmental funds. Vasanti received a Rose fellowship in 2010 to fund some of her site visits.

China was the first country to join GNET in 2007 and the first to complete focus groups and the dietary intervention to investigate substituting



Brown rice being prepared in the Shanghai cafeteria for the study



Vasanti with study personnel in Shanghai

brown rice for white rice on metabolic risk factors. Shortly after defending her doctoral thesis, Vasanti traveled to Shanghai in 2010 with funding from her Rose Fellowship, where she met with the Shanghai team, led by **Dr. Xu Lin** at the Shanghai Institute for Biological Sciences, and visited the intervention site to see the trial in action. The projects in China have paved the way for projects in other countries and have served as an important learning tool.

Chennai, India was the next site to join GNET. Because brown rice is not commercially available in Chennai, it was milled specially for GNET. Here, the focus groups evaluated brown rice and rice with varying degrees of polishing as potential substitutes for white rice. In South India, rice is consumed in various ways, either as intact grains or ground in foods such as *dosa*, so a complex meal plan was created and evaluated using continuous glucose monitoring and glycemic index testing for the dietary intervention, which was funded by an NIH Fogarty grant. The trial is currently underway and is expected to end this November. Nicole visited the Chennai team, led by **Dr. Viswanathan Mohan**

and **Sudha Vasudevan** at the Madras Diabetes Research Foundation (MDRF) in 2011 and got a behind the scenes look at the intervention. She also helped the team develop a database for data entry for the trial. Donna visited the Chennai site in January 2013 to give a talk and to discuss preliminary data from the intervention. She also had the chance to try the intervention foods!

As part of GNET's commitment to capacity building, in the summer of 2012, Vasanti and Nicole developed a short nutritional epidemiology course which was taught by Nicole and Vasanti to the Chennai team and researchers at MDRF.



Participants in Chennai enjoying intervention foods



Nicole with students from the nutritional epidemiology course



Donna visiting the rooftop kitchen where the intervention foods are prepared

Onwards to Africa! In Tanzania, rice and *ugali* (a stiff porridge made from refined maize flour) are the main staple foods. Focus groups thus evaluated a variety of whole grain substitutes including brown rice, sorghum ugali, and whole maize ugali. Flour for both of the *ugali*'s was milled by hand by the Tanzania team, led by **Dr. Marina Njelekela** at the Muhimbili University of Health and Allied Sciences. To capture rural-urban differences, focus groups were conducted in Dar es Salaam (urban) and in Morogoro (rural). Vasanti traveled to Tanzania in the summer of 2010 to oversee the focus groups, which were conducted by a cultural anthropologist from the University of Dar es Salaam. Donna met with colleagues in Dar es Salaam in 2011 to discuss the project.



Focus group in Dar es Salaam



Whole maize ugali



Donna with colleagues Marina Njelekela and Dorothy Gimbi in Dar



Vasanti on safari in Tanzania



Test foods in Kuwait



Focus group in Kuwait

Similar to Tanzania, the diet in Kuwait is diverse. So numerous test foods including whole wheat pita, brown rice, wheat berries (either intact or cooked as porridge), with and without legumes were evaluated in the focus groups. Vasanti traveled to Kuwait in January 2012 to oversee the focus groups at the Dasman Diabetes Institute, which were conducted by Hala AlEissa, a doctoral candidate in the department, as part of her thesis. Hala plans on returning to Kuwait next year to lead the dietary intervention.

Moving to another part of the world- Latin America!

In Costa Rica and Puerto Rico, rice and beans are staple foods in the diet. For this reason, projects in these sites have evaluated substituting brown rice for white rice and increasing the ratio of beans to rice through focus groups and surveys. Hannia oversaw the focus groups and sensory tests of various rice and bean preparations in Costa Rica in collaboration with **Dr. Rafael Monge Rojas** who leads the project and colleagues from the Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud (INCIENSA). In Puerto Rico, in addition to focus groups, a 1-month feasibility study was conducted with collaborators from the University of Puerto Rico to assess multiple substitutions including brown rice, beans, whole grain cereal, and coconut water as a substitute for sugary beverages. Josiemer traveled to Puerto Rico in 2012 to conduct a survey about perceptions and motivators for bean consumption.

Josiemer and Hannia were recently awarded a Dry Bean Health Research Program Incentive Award from the Northharvest Bean Growers Association to expand the surveys, and investigate the effect of culturally-relevant education on bean intake and metabolic risk factors. In Mexico, major sources of refined carbohydrates include wheat tortillas, bread, and rice, as well as sugary beverages; all of which are possible targets for replacement with healthier options. A survey on the perceptions of beans is being conducted in Mexico in collaboration with **Dr. Martin Lajous**, a research fellow in the department of Epidemiology who leads the project in Mexico with colleagues from the National Institute of Public Health.



Taste tests in Costa Rica



Test foods in Costa Rica



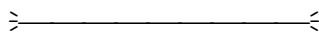
Feasibility study in Puerto Rico

Work in Progress:

In collaboration with **Dr. Clement Adebamowo**, who leads the Nigeria team, and **Sally Anthony**, a doctoral student in the department, colleagues in Nigeria recently completed focus groups evaluating brown rice as a substitute for white rice. Vasanti is currently working with collaborators in Kenya and Malaysia to develop focus group projects, and Josiemer is working with collaborators in Mexico to conduct focus group and survey studies, and is designing a large intervention using healthy carbohydrate staples in Puerto Rico. **Ambika Satija**, a doctoral student in the Department of Epidemiology, is working with Donna and a colleague at Emory University to develop a new project in India as a follow-up to the intervention trial that is currently underway.

GNET's vision is to ultimately develop independent but coordinated trials in all the countries to tackle the global burden of diabetes through wholesome, culturally-appropriate staples foods.

To learn more about GNET and to check out individual projects and publications please visit the GNET website: <http://www.hsph.harvard.edu/gnet/>



NUTRITION IN THE MEDIA

by Hilary Farmer

Dr. Leah Cahill, a Nutritional External Postdoctoral Fellow, and **Dr. Eric Rimm**, Associate Professor, and colleagues published a study in *Circulation* on male health professionals that showed that those men who reported skipping breakfast every day had a 27% higher risk of heart attack or death from coronary heart disease than those who reported they didn't. According to a search conducted by Karen Astle, Communications Manager at *Circulation*, this study received outstanding coverage and was seen by more than **482 million viewers/readers via 560 news stories**. In addition, *Circulation* also featured **Drs. Cahill and Rimm's** research on its **Simple Science** page, which is shared via Twitter and Facebook. This in turn led to the story being reported and shared in social media, reaching the Facebook and Twitter feeds of about **500,000** people. **This is the highest coverage received by a *Circulation* news release within the past 12 months** [emphasis theirs]. Congratulations to Eric and Leah on highlighting such an important health issue!



Cahill LE, Chiuve SE, Mekary RA, Jensen MK, Flint AJ, Hu FB, Rimm EB. Prospective study of breakfast eating and incident coronary heart disease in a cohort of male US health professionals. *Circulation*. Jul 23 2013;128(4):337-43.

Another study by senior author **Dr. Qi Sun**, Assistant Professor, and other colleagues in the Department (**Drs. Frank Hu, Rob van Dam, and Walter Willett**) showed that people who ate at least two servings each week of certain whole fruits reduced their risk for type 2 diabetes by as much as 23% compared to those who ate less than one serving per month. However, the study also showed that greater consumption of fruit juices (as opposed to whole fruits) was associated with higher risk of diabetes. This study is novel because it suggests that certain fruits (such as blueberries, apples, and grapes) might be especially beneficial towards lowering diabetes risk. Results of this study also received very widespread media coverage. Congratulations to all of you!



Muraki I, Imamura F, Manson JE, Hu FB, Willett WC, van Dam RM, Sun Q. Fruit consumption and risk of type 2 diabetes: results from three prospective longitudinal cohort studies. *BMJ*. 2013;347:f5001.



Dr. Walter Willett, Chair, was profiled in the cover story of the July 28, 2013 *Boston Globe Magazine* as the single most-cited nutritionist in the world. The *Globe* portrayed him as a tireless advocate for healthy eating and someone who actually practices what he preaches!

See the bulletin board in the main hall for the story, or click on to The Nutrition Source for this story and other information: <http://www.hsph.harvard.edu/nutritionsource/>



FOUR PUBLIC HEALTH NUTRITION STUDENTS PRESENT THEIR WORK AT CHILDHOOD OBESITY CONFERENCE

Four PHN students under **Dr. Kirsten Davison's** direction, **Rachel Blaine**, **Claudia Gehre**, **Becky Franckle**, and **Neha Khandpur**, have presented their work at a conference at the Boston Marriott Long Wharf in Boston, MA on October 10 and 11, 2013. *Childhood Obesity in the Community: Turning Science into Care* was jointly sponsored by the New Balance Foundation and the Obesity Prevention Center at Boston Children's Hospital. This unprecedented conference addressed how the latest childhood obesity research is being translated into successful community intervention approaches.

Rachel E. Blaine presented her work on ***Developing Mass in Motion Kids: A Multi-Sector Intervention to Reduce Childhood Obesity Using Community-Clinical Partnerships***. As part of a state-community-university partnership, Mass In Motion Kids (MiM Kids) was designed as a community-based intervention to prevent and reduce obesity among primarily low-income children ages 2-12. The objective of the study was to prevent or reduce obesity among predominantly low-income 2-12-year old children in selected communities in Massachusetts using a multi-sector community intervention involving community-clinical partnerships. This study will contribute valuable insight into the strengths and challenges associated with a large-scale community effort to address obesity using evidence-based interventions that are implemented in multiple sectors. Since MiM Kids was built upon an existing statewide initiative, it is well positioned to be replicated throughout Massachusetts if found to be efficacious.



Rebecca L. Franckle presented her work on ***Insufficient Sleep Among Elementary and Middle School Students Is Linked with Elevated Soda Consumption and Other Unhealthy Dietary Behaviors***. Sleep and diet quality are both associated with elevated obesity risk in youth, yet few studies have assessed their co-association.

Utilizing baseline data from the Mass in Motion Kids (MiM Kids) project, this study examines the extent to which insufficient sleep is associated with adverse diet in elementary and

middle school students. When considering the "previous day", 40.1% of students reported that they did not eat any vegetables; 28.3% did not eat fruit; 16.8% did not drink any water; 60.8% drank 100% juice; 53.8% drank juice drinks; and 41.7% drank any regular (not diet) sodas at least once. After adjusting for age and race, students who reported insufficient sleep consumed soda and juice drinks on significantly more occasions and consumed water and vegetables on significantly fewer occasions on the previous day compared with students who reported sufficient sleep. The strongest and most consistent effects were observed for soda with a dose-type-negative relationship with sleep observed. No effects were observed for fruit or 100% juice consumption. Among school-age children in two Massachusetts towns, insufficient sleep duration was associated with unhealthy dietary patterns in this population.



Claudia Gehre presented her work on ***Barriers to Childhood Obesity Prevention in Low-income Families: A Multiple Stakeholder Analysis Using the Family Ecological Model***. Childhood obesity is a growing public health problem and has multiple causes, including individual, organizational, social, and family factors. Parents are gatekeepers to the prevention of obesity in children and can greatly increase its success but are not effectively engaged in childhood obesity prevention efforts. Yet little is known about barriers parents perceive when making healthy lifestyle choices and when it comes to

parent engagement. The Family Ecological Model was utilized to identify and characterize barriers to healthy lifestyles in low-income families reported by key stakeholders from four community sectors contributing to a community-based childhood obesity prevention program. Stakeholders reported a wide range of barriers affecting parent decisions to healthy life styles and engagement in childhood obesity prevention programs. Six main themes across sectors were identified, including family cultural beliefs, lack of community resources, difficult economic situations, other priorities, lack of education, and lack of stakeholder's empathy. No obvious contradictory themes across sectors were identified and the results did not differ substantially between communities. To make interventions to childhood obesity prevention successful, it is necessary to understand the obstacles parents face related to it. This study is one of the first cross-sector studies of barriers to healthy lifestyles in low-income families. With consideration of the study results, future community interventions can have greater success.

Neha Khandpur presented her work on *Engaging Fathers in Childhood Obesity Prevention*. Mothers have

traditionally been the target of family-based interventions for childhood obesity prevention, and maternal behaviors are the current focus of research on child feeding practices.

There is growing evidence to suggest that fathers play an important role in child rearing; thus, it is important to understand fathers' roles in feeding children and promoting active lifestyles. The effectiveness of family-based interventions will be improved by increasing recruitment, engagement and retention of fathers. The funding source for this intervention strategy will be Harvard Catalyst| The Harvard Clinical and Translational Science Center.



NUTRITION DEPARTMENT THESIS DEFENSES

Congratulations to the following students, who have successfully defended their theses:

Hala Alessa successfully defended her thesis, *Carbohydrate Quality and Quantity and Risk of Type 2 Diabetes in US and Kuwaiti Adults*.

After her graduation Hala will continue to study carbohydrate quality and risk of type 2 diabetes and other cardiometabolic diseases in US men and women. In addition, she will help move Kuwait, as part of the GNET initiative, towards the next phase of studying the substitution of refined carbohydrate quality staples of the Kuwaiti diet in relation to type 2 diabetes using continuous glucose monitoring technology and then a pilot randomized controlled trial. Hala is very excited to be able to split her time between Kuwait and Boston, her second home.

Claire Bosire's thesis topic was *Diet and Prostate Cancer*. Claire is now headed to the Division of Cancer Epidemiology and Genetics at the National Cancer Institute as a postdoctoral fellow. There she will focus primarily on ongoing collaborative research related to the etiology and early detection of esophageal squamous cell carcinoma in East Africa, particularly in Kenya.

FACULTY APPOINTMENTS

The following faculty members have recently been appointed or reappointed in the Department of Nutrition:

Dr. David M. Eisenberg, Adjunct Associate Professor of Nutrition

Dr. Ana C. Lindsay, Adjunct Associate Professor of Nutrition

Dr. David S. Ludwig, Professor in the Department of Nutrition

Dr. W. Allan Walker, Professor in the Department of Nutrition

NEW GRANT AWARDS

The following members of the Nutrition Department were recently awarded grants:

Alberto Ascherio, PI. *Prospective Study of Biomarkers and Risk Factors for ALS Incidence and Progression.* Sponsor: NIH.

Alberto Ascherio, PI. *Exploring the Interaction between Serum 25(OH)D, Vitamin D Metabolism Gene Variants, RNA Expression and MS Progression.* Sponsor: National Multiple Sclerosis Society.

Kirsten Davison, PI. *Snacking in Young Children: Parental Definitions, Goals, and Approaches to Feeding.* Sponsor: NIH/NICHD.

Kirsten Davison, PI. *Where Are the Dads? First Steps to Engaging Fathers in Childhood Obesity Prevention.* Sponsor: Harvard CATALYST.

Christopher Duggan, PI. *HSPH SJRI Nutrition Initiative.* Sponsor: United States-India Educational Foundation.

Frank Hu, PI. *Dietary Patterns and Risk of Cardiovascular Disease.* Sponsor: NIH.

Frank Hu, PI. *Mediterranean diet, Metabolites, and Cardiovascular Disease.* Sponsor: NIH.

Anne Lusk, PI. *Making Bicycling a Community Venture.* Gift from The Helen & William Mazer Foundation.

Anne Lusk and Morteza Asgarzadeh, Co-PIs. *Bicycle Research Toward Creating a Bicycle-Friendly Vehicle.* Sponsor: Nissan Motor Co., Ltd.

Anuraj Shankar, PI. *Assessment of Dristhi Application, Research Capacity, and Revision of Impact Assessment Research Study Design, in Karnataka, India.* Sponsor: World Health Organization.

Anuraj Shankar, PI. *Rapid Diagnosis of Frail and Sick Newborns with a Handheld Vital Sign Monitor.* Sponsor: USAID.

Qi Sun, PI. *Pollutant-related Diabetes in the Nurses' Health Study II.* Sponsor: NIH.

Walter Willett, PI. *Life Course Cancer Epidemiology Cohort in Women.* Sponsor: NIH/NCI.

Walter Willett, PI. *Weight Change and Growth: Implications for Breast Cancer Risk.* Sponsor: Breast Cancer Research Foundation.

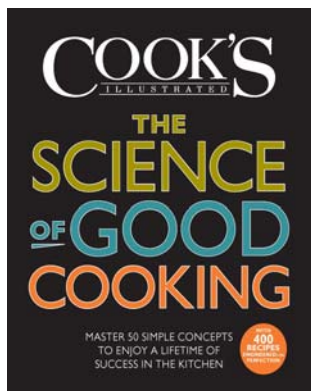




In A Nutshell

News Notes in Brief

Dr. Guy Crosby, Adjunct Associate Professor of Nutrition, recently published a groundbreaking new book, *The Science of Good Cooking, a Cooks Illustrated Cookbook*, by The Editors of America's Test Kitchen and Guy Crosby, PhD. This has become a New York Times bestseller! Check it out at your nearest bookstore.



Once again, the annual **Department Picnic** was a smashing success! The weather cooperated beautifully as everyone enjoyed a beautiful Saturday afternoon at the **Willett's** summer home in New Hampshire, eating delicious food and having lots of fun. **Kim Hesse**, our Director of Administration, made quite an exit as she left the party at the end of the day—in true keeping with Department tradition. Be sure to ask her about her new nickname, “Splash”!



NEW in Nutrition

The following people have recently joined the Nutrition Department:

NEW STAFF

Joshua Bocher joined the Nutrition Department in August as Coordinator for the Asian Diabetes Prevention Initiative. He works with **Drs. Lilian Cheung** and **Frank Hu**, and our collaborators at National University of Singapore's Saw Swee Hock School of Public Health in managing the web content for the upcoming ADPI website. He has extensive previous experience writing and editing, and he has an MA in Regional Studies: East Asia from Harvard as well as a BA in Literary Arts and Classics from Brown. Before coming to Harvard, he lived in Taiwan for over two and a half years, where he studied Mandarin Chinese and taught English



NEW RESEARCHERS

The following new postdoctoral fellows and visiting scientists have recently joined the Nutrition Department:

Yin Cao, postdoctoral fellow, will be working with **Dr. Edward Giovannucci**.

Jordan Dimitrakoff, visiting scientist, will also work with **Dr. Giovannucci**.

Sandra Fuchs, visiting scientist, will be working with **Dr. Walter Willett**.

Tao Huang, visiting scientist, will be working with **Dr. Lu Qi**.

Yinge Li, visiting scientist, will work with **Dr. Xiang Gao**.

Le Tran Ngoan, visiting scientist, will also work with **Dr. Willett**.

Sarah Orner, postdoctoral fellow, will be working with **Dr. Majken Jensen**.

Maya Vadiveloo, postdoctoral fellow, will be working with **Dr. Josiemer Mattei**.

DIETITIANS ARE KEY INGREDIENT IN RECIPE FOR NUTRITION DEPARTMENT'S SUCCESS!

by Hilary Farmer

Most people in the Department know that we have a very able staff of dietitians who perform an invaluable service for our various cohort studies. But do you know just who these dietitians are, and what they do?



A primary component of our epidemiological studies is assessing dietary intake, and the semi-quantitative food frequency questionnaire (SFFQ) is a fundamental resource for this assessment. Our FFQs change every four years to account for changes in the food supply and in people's eating behaviors. In fact, our current version includes ~150 food items, plus vitamin and mineral supplement use, margarines, cooking fats, and breakfast cereals—all of which constitute ~95-99% of total intake of the major nutrients assessed. Other derived or calculated variables include vegetable protein and fat, and whole grain without added bran and germ.

Our research dietitians continually update the FFQ databases. This project involves updating the nutrient content of different foods according to latest available information, researching nutrient content of new or reformulated products, adding new nutritive or non-nutritive variables potentially related to disease, and adding new foods that cohort members frequently report.

After each questionnaire has been optically scanned, and the nutrient database has been updated, the dietitians create files for each cohort participant that contains his or her average daily nutrient intakes. These intakes are calculated by frequency of consumption times the nutrient composition of specified portion size of each food eaten. Also taken into consideration are nutrient content of specific brands and types of cooking oils, margarines, cold breakfast cereals, and multiple vitamins. Each dietitian is responsible for

a different nutrient database—thus, our dietitians are all very busy!

Just who are these dietitians who perform such an important and vital part of our research activities here? Because most of them are at the

Landmark Center, their faces may not be familiar to many of you. So let's take a minute to introduce them now!

Laura Sampson (Kent), Senior Research Dietitian, manages a very busy staff of four dietitians, plus several other employees. Laura is responsible for ensuring overall quality control of the nutrient database, analyzing new variables uncovered by investigators in their research, and tracking changes over time in the different foods along with their respective histories. Laura also works together with our internal investigators and students, and over 100 investigators from outside institutions. As if this weren't enough to occupy her workday, Laura also helps in the grant writing and budget processes for our various cohorts, and has analyzed the different components of the Men's and Women's Lifestyle Validation Studies!



When I asked Laura how she got her start here, she told me that **Dr. Walter Willett** hired her to complete a validation study of 200 nurses in 1980. She was quick to point out that this was back in the days before fancy GPS systems and scannable bubbles on computer-coded questionnaires. Interestingly, then, Laura's first job here consisted of paying individual visits to those 200 nurses throughout the Boston area in their homes in order to interview them, explain the study, and draw blood samples and obtain fat

aspirates. Without a GPS to aid her, Laura coordinated the geographical locations of homes by hand-marking them on a map. After her personal interviews in the morning, Laura then conducted her follow-ups by telephone in the evening. Thus, her work days were often very long! Instead of the rapid computer scanning we have today, Laura relied on a box of index cards that contained the different codes, which required writing these codes down on a separate piece of paper which were then punched onto computer cards later fed into a giant, room-sized computer in Cambridge!

When not busy at work, Laura relaxes in her garden. She has turned her great dislike of lawn-mowing to her advantage by converting most of her lawn to vegetable and flower garden plots, and also has managed to make room for a very nice fish pond. Laura also loves to grow herbs, then dries them and concocts herbal teas, soaps, toothpaste, lemonades, potpourri, hot packs, and tinctures. An added joy to all of this is that these items make “nifty holiday gifts”! Laura also stays very physically active by bicycling, kayaking, and hiking “4,000-footers” in New Hampshire. She’s already completed 26 of those, and her ultimate goal is 40. If anyone would like to join Laura on one of her hikes, she would more than welcome your company!

Lauren (Wolfert) Dougherty is a Research Dietitian, who has been in our Department for 15 years. She was finishing studies at Simmons College while completing a dietetic internship through Sodexo Marriott Corporation when she began working here as Laura Sampson’s assistant. Before coming to Harvard, Lauren worked part-time at Beth Israel Deaconess Hospital as a nutrition assistant. After graduation, she applied for an RD position here at HSPH—and the rest is history!

Lauren not only works with various databases, such as those for the different nutrients in foods and cooking oils, but she also serves as her team’s “mini-administrative department”, processing invoices and ordering supplies. Much of Lauren’s work involves examining or dissecting the nutrient values from the USDA Food Composition Database to determine as best as possible which values are correct for our cohort questionnaires’ time frame. I was surprised to learn that Lauren sometimes finds mistakes in their database. For example, she is presently

analyzing data for the 2010 and 2011 FFOs. First, she compares manufacturer labels of those foods in our database (while keeping an eye out for any changes in the industry, such as lower sodium content, changes in sugars, or changes in hydrogenation for ingredient fats) to USDA Standard Release data for the same time frame. Every single item in our foods database is investigated in detail to determine whether the USDA has kept up with market trends or whether it is necessary to create our own food profiles. Lauren says it’s very difficult to obtain information from the food industry because they are extremely proprietary; consequently, she has to conduct online research to find publications or manufacturing websites that can lead to names of appropriate people to contact. She is proud of the fact that our own databases have a lot more detail than industry food labels and the USDA. One process in nutrient development is creating a recipe for a food item that derives nutrient values with the goal of almost an exact match to manufacturer labels. With access to sometimes very limited ingredients—although challenging—this process is also very exciting!

Lauren loves her job because it affords her so much flexibility and variety. She finds the food industry to be very interesting, as her job involves a lot of investigation of market changes and different companies—especially because they are so secretive—and changes in nutrients and other ingredients. In fact, Lauren sees trying to keep in step with the manufacturers as kind of a game. To do this, she reads the *Wall Street Journal* regularly to see which food companies are being sold to other food companies and what may be a new trend in the marketplace. She also notes the fight for shelf space in supermarkets and how it changes over time. For example, right now the Greek yogurt explosion in the marketplace is squeezing out other kinds of yogurt. I learned that right now Greek yogurt is very “hot”, with close to 35% of the market share! This kind of information will shape the new 2014 FFO. Lauren is excited about the fact that the food industry is starting to work with the USDA to add private industry data into our national nutrient database. The first webinar to initiate the discussion and process of



merging public and private nutrient data was held October 10th. Lauren marvels at what an awesome development this will be!

Lauren Dougherty finds that her personal life has evolved in tandem with her professional life. Once again, she's back in school taking pre-requisites for a master's degree in general management at the Harvard Extension School. Although she's had a lifelong interest in the sciences, her background is actually in catering. Thus, she hopes to tie in her new degree with all of her other interests. The HES program is wonderful because it combines in-class learning with distance courses—an advantage for someone who commutes from Rhode Island! Besides enjoying her classes, Lauren says Harvard is a great place to work, and it lends a good balance to her life. Although her job is very complex—even her own parents don't really understand what she does!—she loves coming to work every day.

Mary Franz is also a Research Dietitian and was the first dietitian hired by **Laura Sampson**. Mary has been in our Department since 1996. After she received her BS degree from Framingham State University, Mary earned an MS from Boston University's Department of Nutrition in a joint program between BU and Simmons College, then her RD. Prior to arriving at HSPH, Mary worked in various clinical outpatient and university settings around Boston.



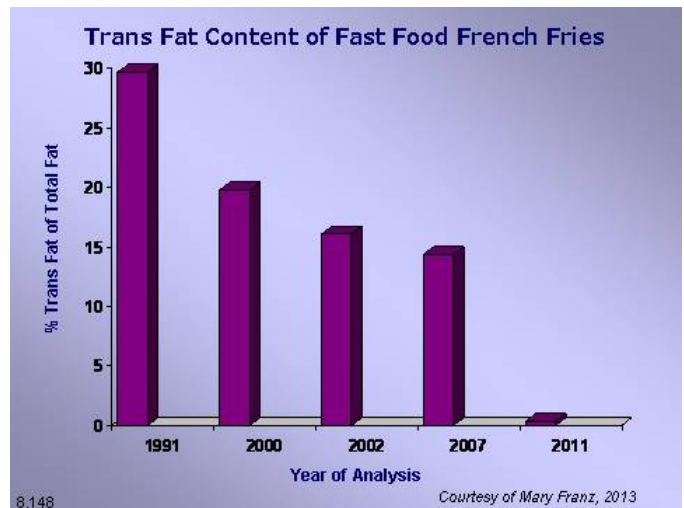
Mary informed me that every 4 years, the dietitians update 5 different nutrient databases. The first database is for foods, and includes dairy, fruits and vegetables, meat, fish, poultry, grains, snacks, fast foods, and bakery items. In

addition, this database has ingredients which are used in an automated recipe program that derives nutrient profiles that are not provided by the USDA. The other 4 databases are cereals, margarines, cooking oils, and vitamins. The dietitians update and supplement USDA data with their own updates. These are derived from food labels, obtained from manufacturer websites or simply from food bought in grocery stores.

Mary is responsible for the cereal and margarine databases. For example, the cereal database is

updated according to cereal labels and by market share determined from industry reports and just plain "eyeballing" grocery store shelves for the best-selling brands. Mary also updates the margarine database, composed of about 50 different brand names, every 4 years.

When I asked Mary what are some of the things that dietitians do, she told me that she adds nutrient variables to the database per investigator requests, such as the glycemic index and the insulin index. Requests are often based on a new interesting diet-related hypothesis such as gluten and relationship to celiac disease. Mary has worked with **Jeremy Furtado**, Research Scientist, in analyzing the trans fatty acid database over the years. I was rather surprised



to learn that if a product contains <1/2 a gram per serving, a manufacturer can claim "no trans fat"! Thus, the dietitians refer to certain cooking oils as "designer oils" because manufacturers often manipulate their TFA content in order to give them a much longer shelf life. So far twenty-five such oils have been analyzed, in addition to 45 margarines and approximately 95 foods. Her work helped **Dr. Willett** influence the FDA trans fatty acid labeling requirement.

I was also curious to learn just how the dietitians perform their analyses? I learned that once a food is procured from the store, it is ground up in a blender and the mixture is put into test tubes for Jeremy's lab, which then uses gas chromatography to separate the different fatty acids. These are then identified in a report based on industry standards, which the dietitians enter into a database, designating a different variable for every single fatty acid. Thus, possessing a basic math aptitude is definitely a plus for this

job, especially since so much of it involves percentages, ratios, calculating means, etc.

Mary also focuses on whole grains in breakfast cereals. And as if she didn't have enough on her plate, she works with the flavonoid database and the automated recipes program that estimates which nutrients would be in a food when there is very little information in the USDA database. For example, once Mary obtains nutrient information, she adds it into her own database, then has to enter every single ingredient into the recipes program. After "guesstimating" each item's percentage, Mary then tweaks it so it will match the real label. A major challenge of Mary's (and the other dietitians') job is working on the SUN UNIX database. Since the database system is not relational, it is a challenge to keep up with linking documentation and calculation files covering 33 years of dietary data.

Even though she's very busy, Mary really loves her job here, especially since she gets to work so independently. There was a consensus that Laura is a good boss, who trusts her people to do their jobs. Laura also has an amazing gift of retention, which has facilitated new dietitians learning their jobs when they begin working here since there is always such a high learning curve at first. Finally, I asked Mary what she does in her spare time, and learned that not only is she an accomplished dietitian, but Mary is also a free-lance writer! In fact, she was recently published in *Scientific American Mind* for an article she wrote on flavonoids and memory in 2011.

Paula Tocco is also a Research Dietitian with an MS degree from a joint program between Simmons College and Boston University. Afterwards, Paula went through an accredited internship and is a Registered Dietitian (RD).



Paula joined the Department 15 years ago and finds that her earlier background in computer science has been enormously helpful in her present position because she writes programs that analyze the diet sections of all of our cohort FFQs.

Since she began working here, Paula has been responsible for the adults' programs and has

recently become responsible for the GUTS (Growing Up Today Study) programs as well. I was curious to know if GUTS dietary habits were considerably different from the adults? I was told the original participants in GUTS are now older—"millennial age"—and tend to eat out a lot. They also eat a lot of prepared foods. Paula also conducts some market research along with the other dietitians.

In the past Paula has been very involved in the design, development, and analysis of pilot diet questionnaires. Good market research is the first step to select which questions to pilot. This might include going to grocery stores and eyeballing the shelves, or checking food labels, or emailing the different manufacturers and asking them questions such as when they started to add calcium to a particular food, etc. On-line market research tools are also very helpful.

Once the pilot FFQs are completed by 800 Nurses', Nurses' II and Health Professional Follow-up Study participants, Paula helps prepare summaries and presents results to **Dr. Willett** and other investigators. This work helps investigators develop the next cycle of cohort FFQs. Paula also uses the pilot data in the development of the analysis programs used to analyze the reported FFQ data by modifying food profiles for FFQ questions according to pilot results. Paula is currently helping the GUTS group with a pilot to help with the creation of the 2010-11 analysis programs and to help with development of their 2014 FFQ. Future adult pilots are on hold for now. Paula and the other dietitians also note how ingredients in foods and serving sizes change over time and can be very trendy. There are so many changes in the marketplace, it is very challenging to keep up.

I couldn't help but observe that Paula has a very active and curious mind. She loves to recall her experience when she was an undergraduate in computer science of taking a Semester-at-Sea, where her "classroom" was actually on board an old, refurbished cruise ship, which had set sail from Florida and traveled all around the world! Her various courses and practicums consisted of studying mostly Third World countries and their history and anthropology. Paula has one son and enjoys spending as much time as possible with him and relaxing at home after a day here of very hard work.



Hilary Wolf is our newest Research Dietitian, and has only been in the Nutrition Department for two years. Hilary received her BS in dietetics with a specialization in bioethics from the Honors College at Michigan State University, and moved to Boston after she graduated in 2010. She started her current position right after completing her dietetic internship at Beth Israel Deaconess Medical Center.

Hilary primarily works on the vitamin database, and is presently attempting to automate the system and develop new tools such as converting the FFQ 4-digit vitamin code to nutrients. Hilary keeps current label and ingredient information on the different vitamins that are reported on the cohort FFQ more than 50 times. If no label information for those vitamins can be found, Hilary tries to determine their best-fit default. If cohort participants report a multivitamin less than 50 times, these multivitamins are also defaulted. She is currently working with **Amanda Sands**, a Nutrition Department student, to automate this work that was previously manually completed to help coders select the best-fit multivitamin code when the exact reported brand does not exist on the vitamin codesheets.

Hilary also tracks changes over time in dosages of individual supplements reported in each different cohort questionnaire. This information is kept up to date at the nutrition information directory: /proj/nhntss/nhnts00/ in the file called vitamin.changes.over.time. Additionally, she completes code sheets for people to use in order to numerically code write-in responses on the different paper and web questionnaires for cereals, margarines, oils, and other foods.

Hilary has also assisted in the development of a database program that tracks changes in food, cereal, and vitamin panel nutrients, serving sizes, and ingredients over time. The nutrients that she has added to the database (such as variables separating supplemented vs natural vitamin B6 content in foods, cereals, and margarines) cover all cohort diet years back to 1980. She also keeps her eye out for current market share data and new trends in the food industry—and finds this to be a very interesting part of her job! In fact, she can lay claim to a small victory recently by having obtained 9 industry oils this past year

and recently worked with **Dr. Eric Rimm** to obtain 9 more samples. Hilary invested her time and effort to find different oils and oil blends currently being used as ingredients in our foods supply in order to make our fatty acid database the best and most accurate as possible. **Jeremy Furtado's** Nutrition Department lab analyzes our oil samples. Thanks to Hilary, Eric and Jeremy for their efforts!

When I asked Hilary how she liked working here, Hilary told me that she really loves her job! This is because it's very unique, challenging, and flexible. Although there was a strong learning curve at first, Hilary says her co-workers are great! When not working with our vitamin database, Hilary loves to run, especially along the Charles River. Hopefully, next year Hilary can compete in a half-marathon.

Erin Wright is Laura's part-time FFQ assistant, and works here in the Department in Building 2. Erin codes the adult FFQs and scans adult and children's questionnaires at the Channing Lab. This then generates the data necessary for Laura and others to later interpret. When I asked Erin to describe her job, she explained that coding consists of taking the name of an item such as a vitamin or breakfast cereal from a questionnaire, then comparing it to a standard, internal list. Erin also orders blank questionnaires for different investigators.



Prior to her arrival at HSPH, Erin worked elsewhere in the food industry. She also worked in a psychiatric hospital in Washington, DC before deciding to go into the field of nutrition. Although her BA is in history, Erin is presently completing the course work at Simmons College that is required by the Academy of Nutrition and Dietetics to apply for a Dietetic Internship, which will in turn result in becoming an RD. Her hope is to pursue her master's degree in the future while working as an RD. Erin loves both her job and living in Boston! When she can find the time away from work and school activities, Erin loves to cook. She also greatly loves working with herbs as she is very interested in herbal medicine.



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**Email Hilary Farmer (hfarmer@hsph.harvard.edu)
with any comments, corrections, or suggestions for future issues.**
