HARVARD T.H. CHAN | SCHOOL OF PUBLIC HEALTH

NUTRI NEWS

The Department of Nutrition

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PROFESSOR KIRSTEN DAVISON LEADS SUCCESSFUL PUBLIC HEALTH NUTRITION PROGRAM

(By Hilary Farmer)

Dr Kirsten K Davison is the Donald and Sue Pritzker Associate Professor of Nutrition in the Department of Nutrition. Her research primarily focuses on family- and community-level factors that influence children's lifestyle behaviors (diet, physical activity, screen-based activities) and risk of obesity. More recently, Dr Davison's work has focused on the development and evaluation of family-centered interventions for obesity prevention in low-income children, including children enrolled in WIC and Head Start. A primary emphasis of these programs is the need to consider factors beyond the immediate family food environment (e.g., community resources, family housing instability, parent mental health) that impact on intrafamilial interactions around healthy lifestyles. She has been the Director of the Public Health Nutrition (PHN) Program since 2011.

NN: Dr. Davison, could you please tell us a little bit about your background and what brought you to Harvard?

KD: My background spans child and family development and health behavior. I received my PhD in Human Development and Family Studies and then transitioned to Public Health as I moved into my first faculty position. My work has always focused on childhood obesity so that was a relatively straightforward transition. Teaching courses that I had never taken before was another story, but that forced me to get up to speed on aspects of public health very quickly.

I came to Harvard as I was at a point in my career where I was ready to push myself from a research perspective and to be in an environment that would ensure that my research was top notch. At Harvard (and Harvard Chan in particular), you have access to much larger studies that use a wider range of methods than at other institutions. Harvard is also an intellectually invigorating environment, and I was ready to engage in that.

NN: I understand that your background is in Psychology, right? How have you incorporated Psychology and Human Development into your nutrition and public health principles?

KD: Yes, I think my work has stayed very true to my original training (and has integrated elements of public health, and of course nutrition, along the way). All of my research focuses on children and families. I received detailed training in theory and conceptual frameworks. I think that is one of the greatest strengths that I have brought with me to public health. I also think that my original training helps me to see the big picture in the lives of children and families. Human Development and Families Studies is essentially a combination of Developmental Psychology and Sociology. So we were heavily schooled in the role of communities, historical context, generational factors, culture, poverty and so forth on human behavior. I think this is a critical perspective when you are trying to develop programs to change people's behavior. If you ignore the context, I think you are wasting valuable resources including time, as acontextual programs are unlikely to be effective or sustained.

NN: I understand one of the core skill areas in your PHN program is cultural competency. Could you give some examples of how this might be acquired by your students?

KD: I view cultural competency broadly and to reflect a level of self-awareness. A term we use a lot in my research team is "cultural humility". From my perspective, an individual is culturally competent when they are mindful of their biases and ways of seeing the world and are aware that individuals who do not share the same history and life experiences likely have a very different lens through which they see the world. Because we regularly work with low-income and ethnic minority populations in public health nutrition, that often means an awareness of your own socioeconomic and cultural background. The best way to develop cultural competency, and demonstrate cultural humility, is to expose yourself to contexts that are foreign to you as that brings your biases to the forefront. For example, living in Germany for a year revealed my strong English-centric bias. Now I am much more aware of the challenges that non-native speakers may experience in a foreign country and that English is one of very many languages spoken worldwide. Had I only lived in New Zealand all my life, I would probably still think that the vast majority of world's population has some level of English competency (which is clearly a misinformed and naïve perspective).

NN: How has the Public Health Nutrition Program expanded under your leadership?

KD: I think when I first arrived here, the public health nutrition program was a nutritional epidemiology program with a public health nutrition course included. With the background I had come from, I was aware that there were many skills one needs in public health to promote behavior change that weren't being taught in our curriculum—cultural competency being one of them. So, with that in mind, I really went about modifying the curriculum to make sure that our students have some level of training in things such as health disparities, theories of health behavior change, food policy, program evaluation and contextual factors overall – all of these things are really now reflected in the curriculum.

NN: There has been a major surge of student interest in your program. What do you think attracts these incoming students to your program?

KD: What I am told by the incoming students is that the combination of nutrition and health behavior is very attractive and that it is something that is not really offered in other programs around the country. That suggests to me that I moved things in a direction that was really appropriate for the student population. I hope it also means that the students go out in the world with a broader skill set and that it makes them more effective as public health nutrition leaders. I also think a focus on underserved populations, nutrition disparities and social justice in general starts to attract a broader range of students. We have students from all kinds of backgrounds -- disciplinary and socioeconomic backgrounds –- and I think that is a very good thing because it facilitates out ability to develop culturally sensitive and meaningful nutrition programs for diverse populations..

NN: What kinds of backgrounds do your students generally bring into the program and how is that an asset?

KD: Actually, related to my previous response, the students are coming from a wide range of backgrounds. Yes, we definitely have students coming in with a Master's degree in Public Health Nutrition and some are Registered Dieticians but we also have students with a background in economics, urban planning, and sociology. I think we've had some biology students as well. This is a wonderful thing because these different disciplines have different ways of doing things and I think that it increases the toolkit of our students as a group when they can borrow from their classmates.

NN: How has a doctorate in public health nutrition prepared your students and post-docs for their future careers? Could you give examples?

KD: I think a Doctorate in Public Health Nutrition as it is currently formulated places students in a position where they can apply for academic and non-academic positions within and outside of nutrition. I think this is great because it increases the job opportunities for our students. For example. I know of one particular student who recently got a tenure-track faculty position in a department of human development and family studies, which is awesome. Her position bridges nutrition and human development. I think students also come out of the program with an understanding and an appreciation for other disciplines and a willingness to really be proactive in seeking collaborations outside of nutrition. All of these things are to the benefit of the students and the populations that they're working with.

> **Editor's Note:** Dr Davison will discuss her work in the PHN Program at the Monday Nutrition Seminar on April 30, 2018. Our Monday Nutrition Seminars are held every Monday in Kresge 502 from 1:00-2:00 pm. These seminars are free and open to the public.

PUBLIC HEALTH NUTRITION PROGRAM RESTRUCTURED UNDER DR KIRSTEN DAVISON'S LEADERSHIP

(By Alyssa Aftosmes-Tobio, Project Manager, Communities for Healthy Living Project and prior Program Coordinator for PHN)

The Public Health Nutrition (PHN) Program, one of the Nutrition Department's core concentrations, has greatly evolved since ***Dr Kirsten K Davison***, Donald and Sue Pritzker Associate Professor of Nutrition, became its new director. After joining the Nutrition faculty in 2011, Dr Davison championed the restructuring of the Public Health Nutrition program. To do this, we first had to formalize all course and program requirements. With the input and guidance of a multidisciplinary group of faculty and staff, we developed direct and concise written documentation of the program's purpose, structure, and requirements. The goal was to design a program that gives students the best skill set possible to achieve their long-term academic and research pursuits. A key piece to achieving this goal was to add required

courses in program planning and evaluation, behavior theory, health disparities, behavioral research methods, and to establish an applied research experience. Dozens of meetings with faculty, department staff and administration, admissions staff, and school administrators guided the restructuring process; these meetings resulted in a program that was successfully vetted by the Committee on Educational Policy.

Much of our time was dedicated to developing program materials and a student handbook, which provides guidance, direction, and clear expectations for the course load, practical research experience, and other academic activities. With a new vision for the program, we wanted to market the PHN program to a broader range of potential students; the program is a unique endeavor well suited for non-traditional students, and those applicants interested in intersecting disciplines. By establishing a PHN program page within the Nutrition Department website, we were able to attract more candidates to the program, and expand our cohort year-to-year. Kirsten is uniquely positioned in both the Nutrition and Social and Behavioral Sciences (SBS) Departments, which made creating a double major between PHN and SBS an obvious choice. This partnership also highlights the broader focus of public health nutrition as a whole.

Many thanks to the group of faculty and affiliates who had the vision and drive to assist us through the restructuring process, and to those who have since joined as academic advisors to our students: ***Drs Teresa Fung, Eric Rimm, Matt Gillman, Clifford Lo, David Ludwig, Lilian Cheung, S. Bryn Austin, Laura Bogart, Cara Ebbeling, Alison Field, Steve Gortmaker, Emily Oken, Emily Broad Leib, Angie Craddock, Tracy Richmond, Kendrin Sonneville,*** and ***Elsie Taveras.***

I would also like to thank, of course, our students! Especially those who were with us during the restructuring: your endless patience did not go unnoticed, and your continual feedback was invaluable!

HARVARD STUDENTS LEARN INTERESTING NEW SKILLSET IN PHN PROGRAM!

Jake Beckerman,
Doctoral Student in Population Health Sciences

Communities for Healthy Living (CHL) is a community-based participatory intervention to prevent obesity in low-income preschool children. The piece of the intervention I have worked on most is our parent empowerment class, Parents Connect for Healthy Living (or PConnect). Over the course of 10 class sessions, parents explore a range of influences on children's lifestyle behaviors (i.e., diet, physical activity) and health from child temperament to neighborhood environments. The program helps parents build social networks and see the benefits of sharing resources within their networks, raises parents' critical consciousness of their child's health (e.g., we live in a neighborhood with little access to healthy foods so I will need to find resources outside our neighborhood to help my child be healthy), and provides opportunities for parents to build skills to overcome obstacles to health. In addition to focusing on upstream factors rarely addressed in obesity prevention, the program is novel in its use of low-income parents as peer leaders and its integration into Head Start which reaches millions of low-income children and families nationally.

PConnect was pilot-tested last year with very promising results. Parents took it upon themselves to share information about community resources with one another and formed bonds that lasted beyond the program. One group even started to meet outside of class to go to Zumba together! We also saw that PConnect had a meaningful impact for the parents trained to be PConnect peer leaders. Even though her daughter has graduated from preschool, one of the parent peer leaders is returning this year to lead PConnect again. It is really exhilarating to see parents building the connections and skills to promote the health of families in their communities.

When I came to this project, I knew a bit about developing a curriculum from my experience as a high school science teacher. However, I had never worked in adult education and I was brand new to the

Boston community. What has made PConnect successful is that it was created in collaboration with the CHL Community Advisory Board, an inspiring and passionate group of Head Start parents and staff committed to ensuring that the intervention will meet the needs of Head Start families across Boston, Cambridge, and Somerville. I am looking forward to continuing to work with and learn from the Community Advisory Board in the years to come.

Adam Gavarkovs
Doctoral Student in Population Health Sciences

I am a first year doctoral student in the Public Health Nutrition concentration, working with several other great doctoral and masters students on projects led by ***Dr. Kirsten Davison***. I was attracted to the program because of the unique combination of rigorous, high-impact research that can inform action on the policy level paired with a commitment to improve the health of marginalized populations on the community level. In the short time I have been here, I have had the opportunity to work with a talented group of staff and students on Dr. Davison's intervention study, Communities for Healthy Living (CHL), previously described by Jake. During this time, I have learned a tremendous amount about how to partner with community organizations and community members to co-create an intervention that reflects organizational priorities and community needs. My experience working on CHL has also made me appreciate the importance of considering implementation, feasibility, and sustainability when designing community-based nutrition interventions. As CHL is integrated within routine care at Head Start programs, it can reach many low-income families and be maintained over time. Dr. Davison's participatory approach to conducting research has given me the opportunity to explore specific areas I am interested in within CHL, such as finding ways to better engage fathers in child obesity prevention.

Beyond my work on CHL, I have had opportunities to prepare a white paper with ***Drs. Davison*** and ***Taveras*** (commissioned by Healthy Eating Research) on strategies to engage fathers in childhood obesity prevention during the first 1000 days and to assist with the preparation of two NIH grant applications on topics of specific interest to me (fathers and implementation science – in the context of childhood obesity prevention). I look forward to continuing my work with Dr. Davison and her team in the upcoming years!

Tayla Ash
ScD student in Nutrition and Social and Behavioral Sciences

I am a 4th year doctoral student in the dual program in Public Health Nutrition and Social and Behavioral Sciences. The dual program initially was of interest to me because of how well it coincided with my interests in childhood obesity prevention and social determinants of health. Being a student in both departments has proven beneficial, not only in regard to the content knowledge and methods I have acquired from both disciplines, but also the community and resources unique to each department. My dissertation is focused on early childhood sleep as a risk factor for obesity. With funding I received from the National Institutes of Health, I have been able to integrate my dissertation research into the Rise & SHINE study led by ***Drs. Taveras, Davison*** and

Redline. Specifically, I am examining the age, during infancy, at which differences in a variety of sleep outcomes across race/ethnicity and socioeconomic status emerge. I am also using both quantitative and qualitative data analysis to investigate the contextual factors that may be responsible for these differences, with hopes to inform future intervention efforts. My quantitative analyses use a combination of anthropometric, survey, and electronic health record data from Rise & SHINE, that I had the privilege of helping to collect; for the qualitative analysis, I am using data from interviews that I conducted with a subset of mothers from the larger study. While some may find primary data collection to be taxing or tedious, engaging in conversation with mothers, and visiting them and their infants various times over the first two years of their child's life, has certainly been one of the most rewarding and insightful parts of the process for me. Upon defending my dissertation this summer, I will begin a postdoctoral fellowship at Brown University, with the Department of Psychiatry and Human Behavior, where I will continue conducting research around early childhood obesity and childhood health disparities.

POSTDOC STRIVES TO IDENTIFY MEANINGFUL STRATEGIES TO ENGAGE FATHERS IN CHL

Dr. Roger Figueroa
Postdoctoral Research Fellow

Roger Figueroa is a postdoctoral research fellow conducting translational research on childhood obesity prevention. His research interests include the role of contextual influences on childhood obesity and energy balance behaviors. Roger is also interested in father involvement and other family-level factors influencing children's energy balance behaviors, and in developing strategies to engage fathers in family-centered childhood obesity interventions. Prior to joining Dr. Kirsten Davison's research team last summer, Roger had learned tremendously from Dr. Davison's childhood obesity research and considers her a role model with similar academic backgrounds and complementary areas of research interests.

In his current role, Roger has participated in a wide range of research activities within the Communities for Healthy Living (CHL) project. His experience to date has allowed him to build skills in participatory intervention research, protocol development, management of complex datasets, as well as quantitative data analysis. Roger also has had multiple opportunities to receive additional training in scientific writing and responsible conduct of research at Harvard Chan. Over the course of his postdoctoral training, Roger strives to identify meaningful strategies to engage fathers in the prevention of childhood obesity. He also plans to draw from his previous and current work to produce several manuscripts, develop skills in grant writing, advanced statistical methods, and Community Based Participatory Research (CBPR).

OTHER NUTRITION FACULTY INVOLVED IN PHN RESEARCH

Dr. Josiemer Mattei
Assistant Professor of Nutrition

Dr. Mattei and her students and postdocs follow a multidisciplinary approach by combining epidemiological research in population-based cohorts with public health nutrition projects to assess and address nutrition-related disparities among underserved populations. Their emphasis is on Hispanic/Latino adults who have high risk of cardiometabolic conditions. While Mattei and her team collaborate with several investigators locally, nationally, and internationally in public health nutrition projects, they currently lead two main projects.

In Boston, Mattei's group are conducting a community-based intervention to improve diet quality, tailored to specific Latino heritages. The education and skill-building program incorporates 'deep-tailored' culturally-appropriate messages and strategies that go beyond the standard adaptations. The intervention is informed using a mixed-methods approach consisting of in-depth interviews with Latino nutrition experts and with community individuals, and community-wide surveys. Their partners are the South End Community Health Center, several Action for Boston Community Development sites, and other Latino-serving agencies. Mattei's second public health nutrition project is a cost-effective culturally-adapted intervention to improve diet quality and reduce cardiometabolic risk among adults in Puerto Rico at high-risk for diabetes. Using similar mixed-methods approaches, they identified traditional healthy foods and dietary preferences and incorporated them into the adapted program, to be delivered at clinical settings, including their partners, FDI Clinical Research.

Her team's students and researchers engage at every level of the projects, from design to field work to analyses and dissemination. Simultaneously, they work towards translating the gained information into public health messages and policies for healthy eating that are practical for each Latino population.

Dr. Eric Rimm
EVERGREEN Senior Faculty
Professor of Nutrition and Epidemiology

Dr. Rimm is a Professor of Nutrition and Epidemiology at the Harvard T.H. Chan School of Public Health and a Professor of Medicine at the Harvard Medical School. He is the Director of the Program in Cardiovascular Epidemiology, and is also affiliated with the Channing Laboratory at the Brigham and Women's Hospital and Harvard Medical School. Dr. Rimm is an internationally recognized nutrition expert and health communicator. His pioneering research has focused on the relationship between micro- and macro-nutrients in relation to weight gain and cardiovascular disease prevention and public health issues related to food insecurity, access, and policies for better population health. With over 630 peer-reviewed papers on nutrition and public health, he is frequently asked to speak to national and international audiences. Dr. Rimm values the importance of research translation and was a member of the 2010 USDA Dietary Guidelines for Americans Advisory Committee.

To learn more about EVERGREEN: https://sites.sph.harvard.edu/evergreen/

DR. ELSIE TAVERAS CO-LEADING THE RISE & SHINE STUDY

Elsie M. Taveras, MD, MPH*,* also of the Nutrition Department **(**Professor of Pediatrics, HMS; and Professor in the Department of Nutrition, HSPH), is co-principal investigator of the **Rise & SHINE (Sleep Health in Infancy & Early Childhood) study with Drs. Kirsten Davison and Susan Redline . This** is a longitudinal cohort study that examines infants' sleep patterns between birth and 2 years, familial and environmental determinants of these patterns and their effect on accelerated weight gain over the first two years of life. The study is funded by NIDDK.

The goals of the study are to examine associations of infant sleep patterns with growth from birth to 24 months of age, feeding and neurobehavioral pathways linking adverse sleep patterns to early childhood obesity, and modifiable determinants of infant sleep patterns. The research team, which brings together students and staff from Massachusetts General Hospital for children (MGH), Harvard Chan and Brigham & Women's, is carrying out this project within a cohort of infants recruited from the newborn unit at MGH, which cares for over 3650 newborns/year. In addition to comprehensive data collected during home visits (e.g., parents surveys, infant and parent sleep actigraphy) the study leverages the existing electronic health records from their pediatric primary care visits across the MGH health care system.

FORMER PHN STUDENTS: WHERE ARE THEY NOW?

Rachel Blaine, DSc, MPH, RD, (2015 alumni) is in her 3rd year back in her sunny home state as Assistant Professor of Nutrition and Dietetics at California State University, Long Beach. She also serves as the Director of their accredited undergraduate and post-graduate programs to train future registered dietitians. While at HSPH, she worked under ***Dr. Kirsten Davison*** on several studies including Childhood Obesity Research Demonstration project (CORD). Her doctoral research focused on early childhood obesity prevention interventions, child care wellness policies, parent feeding strategies, and child snacking. Since graduating, her research continues to explore the role of caregivers in promoting healthy diets among young children, with a recent interest in children with autism and other developmental disabilities. She has also worked to include new competencies for her undergraduate nutrition students, including a new research methods course.

Dr. April Bowling
Assistant Professor of Health Sciences at Merrimack College

While completing my doctorate in the Department of Nutrition, I was lucky enough to work with ***Dr. Kirsten Davison*** as my advisor and research mentor. My dissertation focused on the effects of exercise and nutrition on chronic disease risk and behavioral health outcomes in children diagnosed with neurodevelopmental and affective disorders. Such diagnoses include autism, Attention-Deficit/Hyperactivity Disorder (ADHD), and mood disorders; children with these behavioral health diagnoses face significantly increased risk of poor health outcomes including obesity and cardiovascular disease. Dr. Davison helped guide my education in the theoretical foundations of intervention development in both family and school settings, which set the stage for both my primary dissertation research, as well as my current research agenda.

After defending my dissertation in November of 2016, I took a faculty position as Assistant Professor of Health Sciences at Merrimack College in North Andover, Massachusetts. I now teach graduate and undergraduate courses in epidemiology and chronic disease prevention, and have two primary lines of research ongoing. The first utilizes several large cohorts, including the Generation R cohort in the Netherlands and the ECLS cohort in the United States, to examine dietary and physical activity patterns and medication use in children with ADHD and effects on later obesity risk. My second area of research focuses on translational exercise and dietary interventions to improve cognitive, behavioral, and chronic disease outcomes in vulnerable and underserved populations of children. I am the Principal Investigator for an exercise and STEM learning intervention now running in the Lawrence Public Schools, funded by the New Balance Foundation. I continue to collaborate with Dr. Davison; we are currently implementing a cybercycling intervention in special education classrooms in the Worcester Public Schools, and together with Dr. Charles Hillman of Northeastern University, we have begun a collaborative working group for Boston-area researchers focused on physical activity, nutrition and child behavioral health.

Dr. Jennifer Falbe
Assistant Professor in the Department of Human Ecology at UC Davis

Dr. Jennifer Falbe graduated from the Public Health Nutrition doctoral program in 2013 with a dual degree in Epidemiology. Her adviser was ***Dr. Walter Willett***, and she also worked closely with ***Drs. Kirsten Davison*** *and* ***Alison Field***. Jennifer's dissertation focused on the impact of screen time on unhealthy weight gain and diet quality in adolescents using data from the Growing Up Today Study II. Additionally, Jennifer developed a tool for rating the comprehensiveness and strength of child care center wellness policies. She also played a major role in planning and evaluating the MA Childhood Obesity Research Demonstration (CORD) Project–a CDC-funded multisectoral intervention to address childhood

obesity in low income communities. In addition to contributing to the overall study evaluation, Jennifer analyzed CORD data to find that children who slept near small screens, like cell phones, had a shorter sleep duration and poorer sleep quality than those who did not sleep near those devices.

After graduating from Harvard, Jennifer completed a postdoctoral fellowship at the UC- Berkeley School of Public Health with Dr. Kristine Madsen. There, Jennifer successfully obtain an American Heart Association Postdoctoral Award and additional funding for her work evaluating the nation's first soda tax in Berkeley. This work was widely covered in the press, including by the New York Times and Wall Street Journal. Jennifer is now an Assistant Professor in the Department of Human Ecology at UC Davis. Her work over the last several years has employed qualitative and quantitative methods and has also included evaluations of primary care nutrition and physical activity interventions for under-served youth and municipal healthy retail programs. Jennifer has published her research in Pediatrics, *American Journal of Clinical Nutrition, American Journal of Public Health, American Journal of Preventive Medicine*, and others. She also was recently awarded an NIH career development K award.

Becky Franckle, ScD, MPH
Postdoctoral Fellow

Dr. Becky Franckle graduated from the PHN program in 2016 as the first HSPH graduate with a dual degree in Nutrition and Social & Behavioral Sciences. During her time as a doctoral student in the department, her research included working with ***Dr. Kirsten Davison*** to evaluate the Massachusetts Childhood Obesity Research Demonstration Project (MA-CORD), and also with her mentor ***Dr. Eric Rimm*** to compare transactions made with and without Supplemental Nutrition Assistance Program (SNAP) benefits at a large supermarket chain in the Northeastern U.S.

She is now a postdoc in the Nutrition Department, continuing her research on the implementation and evaluation of community- and supermarket-based obesity prevention programs and policies in collaboration with members of the EVERGREEN group. She will begin her next appointment as an Assistant Professor of Health Sciences at Merrimack College in Fall 2018 (where she is excited to join two former graduates of the Harvard PHN program on the faculty, ***Juliana Cohen*** and ***April Bowling***)!

Cindy Leung, ScD, MPH
Assistant Professor, Department of Nutritional Sciences
University of Michigan school of Public Health

Dr. Leung is a nutrition epidemiologist whose research focuses on diet and health disparities in vulnerable populations. Using qualitative and quantitative research methods, her research focuses on three primary areas: 1) understanding stress as a novel mechanism underlying food insecurity and children's risk of obesity, 2) evaluating the impact of participating in federal food programs on dietary behaviors and chronic disease risk, and 3) assessing stakeholder-supported strategies for improving the Supplemental Nutrition Assistance Program (SNAP). In a separate line of inquiry, she has conducted several studies on diet and cellular aging. Dr. Leung earned her Sc.D. in Nutrition and Epidemiology from the Harvard School of Public Health in 2012. She was a student in our Public Health Nutrition Program.

MONDAY NUTRITION SEMINARS

The Department of Nutrition holds its weekly **Monday Nutrition Seminar Series** every Monday throughout the academic year. The talks are varied, but they highlight the many different aspects of cutting-edge research that is currently being conducted in the fields of nutrition and global public health. These seminars are held from **1:00-1:20 pm in Kresge 502** at the Harvard T.H. Chan School of Public Health. The seminars are free and open to the public.

The following speakers will discuss their work in March:

March 5 — ***Nancy F. Krebs, MD, MS***, Professor of Pediatrics; Head, Section of Nutrition; Vice Chair, Academic Affairs; Dept of Pediatrics, University of Colorado School of Medicine, *"Preconception vs prenatal maternal nutrition interventions in diverse, low-resource settings—Is earlier better?"*

March 12 — ***SPRING BREAK*—No Monday Nutrition Seminar**

March 19 — ***Dr. Kjetil Lauvland Bjørnevik***, Postdoctoral Fellow, Department of Nutrition, TBD

March 26 — ***Alessio Fasano, MD*** , W. Allan Walker Chair of Pediatric Gastroenterology and Nutrition, Professor of Pediatrics, Harvard Medical School, TBD

NUTRITION IN THE NEWS

Alyssa Moran, SD candidate, successfully defended her dissertation, titled *Healthier Restaurant Environments as a Child Obesity Prevention Strategy,* on February 12, 2018.

Coffee May Lower Risk of Early Death from Colorectal Cancer

According to the American Cancer Society, colorectal cancer (CRC) is the second leading cause of cancer death in the U.S. However, according to a recent study from Harvard T.H. Chan School, people with CRC who drank at least four cups of coffee per day after their diagnosis had a significantly lower risk of early death from either their cancer or any cause than those who didn't drink coffee.

Yang Hu, a doctor of science candidate in the Nutrition Department and lead author of the study, said that "Until now, very few dietary factors have been linked with colorectal cancer prognosis. Our new study suggests that coffee may potentially improve survival of patients diagnosed with colorectal cancer".

Previous evidence had suggested that coffee may help lower risk of mortality as well as help prevent several chronic diseases because of its ability to fight inflammation and insulin resistance. Additionally, coffee also contains anti-carcinogenic compounds. In the new study by Hu et al. the authors looked at nearly eight years of data from 1,600 individuals who were enrolled in the Nurses' Health Study and the Health Professionals Follow-up Study who had been diagnosed with CRC. The researchers found that, compared with those who didn't drink coffee, participants who drank at least four cups per day were 52% less likely to die from CRC and 30% less likely to die from any cause during the study period. For those who already drank at least two cups of coffee per day prior to CRC diagnosis, maintaining this level of consumption after diagnosis was associated with a 37% reduction in CRC-specific mortality and a 29% reduction in all-cause mortality when compared with those who did not drink coffee or who drank less than two cups both before and after CRC diagnosis. They found similar benefits for both caffeinated and decaffeinated coffee.

"Although we can't claim causality between drinking coffee and reduced mortality risk, it is still very impressive to see such significant reductions in deaths from colorectal cancer and other causes among

patients who drank at least four cups of coffee each day," said ***Dr Mingyang Song***, research fellow in the Department of Nutrition and senior author of the study. "Should our findings be confirmed in further studies, physicians may want to encourage their patients with colorectal cancer to start drinking coffee if they have not done so already, and, for those who are already coffee drinkers, to maintain their coffee intake. For patients who cannot tolerate caffeine, decaf is a good option."

Hu Y, Ding M, **Yuan C, Wu K, Smith-Warner SA, Hu FB**, Chan AT, Meyerhardt JA, Ogino S, Fuchs CS, **Giovannucci EL, Song M.** Association Between Coffee Intake After Diagnosis of Colorectal Cancer and Reduced Mortality. Gastroenterology. 2017; *in press*

Erratum: There is a small error in the abstract: it should be stage 1,2 or 3 CRC patients, not just 1 or 2.

From: https://www.hsph.harvard.edu/news/features/coffee-colorectal-cancer/

Drs. Dong Wang and Frank Hu Review Pros and Cons of Precision Nutrition and Type 2 Diabetes Management

A combination of regular exercise, maintaining a healthy body weight, and following evidenced-based dietary recommendations to prevent and manage type 2 diabetes (which affects nearly 425 million adults worldwide) remains sound guidance for the general population. However, in combination with recent technological advances, the emerging field of precision nutrition offers a novel approach to tailor prevention and treatment of this chronic disease to individual characteristics—such as genetic background or the gut microbiome.

Precision nutrition, or personalized nutrition is a method of tailoring nutrition recommendations based on a person's DNA, unique microbiome, health history, various environmental exposures such as diet or lifestyle habits, and an emerging area of research called metabolomics. Recent advances and challenges in the applications of precision nutrition to diabetes prevention and management were reviewed by ***Drs Dong Wang*** and ***Frank Hu*** in the February 2018 issue of *The Lancet Diabetes & Endocrinology*.

"It is well-known that the response to the same dietary intervention varies considerably across individuals," said Wang, a research fellow in the Department of Nutrition and lead author of the paper. "Thus, the concept of personalized or precision nutrition in disease prevention and management has attracted a great deal of attention in the scientific community and the general public. However, it is important to assess current evidence before widespread applications in clinical and public health settings."

Several areas of research in the application of precision nutrition in diabetes prevention and management were reviewed by the authors, including: Gene-types that are related to food intake and the breakdown of certain nutrients; the two-way interaction between food intake and the gut microbiota; measuring metabolites that can paint a picture of one's long-term dietary patterns such as a higher intake of fruits, vegetables, and lean meats and associating a particular pattern with one's risk for developing type 2 diabetes and explaining the health effects of this dietary pattern; and mobile apps and wearable devices that provide real-time information on one's food intake, exercise, and blood sugar level that can be integrated with other information from -omics data and traditional dietary questionnaires.

A number of obstacles prevent this technology from having a major impact on improving patient care and health outcomes, including the high cost of collecting and analyzing -omics information, challenges in interpreting the big data, and a lack of well-designed clinical intervention studies. Research is also needed to see if precision nutrition interventions are more effective than the standard approach of providing general diabetes nutrition education focused on behavioral change.

"Despite recent advances in technologies and some promising data from precision nutrition studies, this area of research remains at an early stage," said Dr Hu, Professor and Chair of the Department of Nutrition, and senior author of the paper. "We should manage unrealistically high expectations or overpromise of precision nutrition. To address major public health problems like diabetes, we need to combine public health strategies with precision nutrition technologies."

Wang DD, Hu FB. Precision nutrition for prevention and management of type 2 diabetes. *The Lancet Diabetes & Endocrinology*. 2018 Feb 9.

Excerpted from: https://www.hsph.harvard.edu/nutritionsource/2018/02/09/precision-nutrition-type-2-diabetes-management-is-it-ready-for-prime-time/

First Teaching Kitchen Collaborative Research Day Launched February 7, 2018

Some members of the TKC Research Day Planning Committee (left to right): Naomi Laporte, Allison Righter, Dr. Aviad Haramati, ***Dr. Jennifer Massa, Dr. Frank Hu, Dr. David Eisenberg***, Greg Drescher.

The first annual Teaching Kitchen Collaborative Research Day was held on February 7, 2018, where a mix of over 100 physicians, healthcare professionals, students, and researchers gathered to learn about and discuss experiences related to "teaching kitchens" and their potential to impact the behaviors, health outcomes, quality of life, and costs of care for a range of populations. This inaugural conference was hosted by the Harvard Chan School of Public Health's Department of Nutrition and The Culinary Institute of America (CIA).

The commitment to develop "best practices," "optimal research strategies," and the creation of a shared research network are founding principles of the Teaching Kitchen Collaborative (TKC), launched in 2016 by ***Dr. David Eisenberg***, Adjunct Associate Professor in Nutrition, and colleagues at The CIA and Harvard Chan's Department of Nutrition, to bring together organizations with existing or planned teaching

kitchens. Two years after its launch, the *TKC Research Day* marks the first scientific meeting to enable *TKC* members and researchers to present original findings on teaching kitchens and pilot data emerging from these models.

Among the wide variety of content covered by over 40 posters and nearly 20 presentations, some recurring topics emerged: the ongoing development of teaching kitchens tailored to different settings and populations (patients, employees, children, retirees, health care professionals, etc.); partnerships with local agriculture as well as experimentation with urban agriculture; increasing nutrition literacy among health professionals and trainees (including medical students); and research methodologies and strategies to assess changes in behaviors, clinical impact, and financial return on investment.

"What we're seeing here are the early-stage garage inventions," noted Dr. Eisenberg (right) during the day's presentations. "With continued tinkering and improvement, some of them may likely become innovations we can't live without."

Excerpted from: https://www.hsph.harvard.edu/nutrition/2018/02/16/inaugural-teaching-kitchen-research-day/

DIETITIAN PAULA TOCCO REACHES 20-YEAR MILESTONE IN NUTRITION DEPARTMENT!

Research Dietitian ***Paula Tocco*** has just achieved a major milestone in her career—she's been with the HSPH Nutrition Department for 20 years! After receiving her MS degree from a joint program between Simmons College and Boston University, Paula completed an accredited internship and passed the Registered Dietitian (RD) examination and earned her RD credentials.

When Paula first joined our Nutrition Department 20 years ago, she discovered that her earlier background as a computer scientist turned out to be enormously helpful because she writes programs that analyze the diet sections of our entire cohort FFQs. It has also been very useful in improving existing systems and finding more efficient ways to perform her job.

Paula creates new analysis programs as needed for our cohorts and maintains all the existing programs that are used to analyze the food frequency questionnaires (FFQs). She is currently responsible for NHS, HPFS, NHS2, GUTS (Growing Up Today Study), NHS3 and ACS (American Cancer Society) programs. It is a very challenging job, as decisions frequently have to be made about future FFQ's before the previous FFQ's are thoroughly analyzed.

Paula is also responsible for maintaining the vitamin database and related tasks such as drop-down menus, code sheets and index creation. Vitamins in the marketplace change frequently, requiring major updates for each set of cohort years. There are so many changes in the marketplace, it is very challenging to keep up.

Over the years, Paula has been very involved in the design, development, and analysis of pilot diet questionnaires for both adults (NHS, HPFS and NHS2) and GUTS. She pointed out that good market research is the first step towards selecting which questions to pilot in a new study. This might include going into grocery stores and eyeballing the shelves, simply 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. Pilots have not been done over the past few years, but a new pilot is scheduled for this summer.

Paula works with co-workers, programmers, cohort managers and ACS project managers as needed to get the various projects done. For example, once pilot FFQs were completed by 800 Nurses', Nurses' II and Health Professional Follow-up Study participants, Paula helped prepare summaries and presented results to ***Dr. Walter Willett*** and other investigators. This work helped investigators develop the next cycle of cohort FFQs. Paula also used 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 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 continues to go on fun vacations at least once a year to spend quality time with her son. This past summer they (along with other family and friends) went to Alaska and had a great time with excursions such as dog mushing on a glacier high in the mountains accessible only by helicopter and riding in a seaplane to a remote area to view wild bears feasting on nutritious salmon! She has one son, Nicholas, who is her pride and joy, she enjoys spending as much time as possible with him, being active or relaxing at their home in Newton after a day here of very hard work.

Nutrition Source Updates

Precision Nutrition and Type 2 Diabetes Management
Is it ready for prime time? A review of advances and challenges in the application of this emerging field.
https://www.hsph.harvard.edu/nutritionsource/2018/02/09/precision-nutrition-type-2-diabetes-management-is-it-ready-for-prime-time/

Spotlight on Heart Disease
In recognition of "heart month," learn about heart disease, and steps you can take to help prevent it.
https://www.hsph.harvard.edu/nutritionsource/disease-prevention/cardiovascular-disease/

Food Feature: Kale
Who knew a vegetable could be so cool? Learn some history behind this popular leafy green, along with recipes and notes on kale and health.
https://www.hsph.harvard.edu/nutritionsource/kale/

Muffin Makeover
Recipes and test-kitchen insights that home bakers can use to build healthier muffins and other baked goods.
https://www.hsph.harvard.edu/nutritionsource/muffin-makeover/

If you would like to remain current as to what is happening in the field of nutrition, please be sure to view our Nutrition Source website for the latest updates!

(See: https://www.hsph.harvard.edu/nutritionsource/)

NUTRITION HAPPENINGS AROUND HARVARD

DIVISION OF NUTRITION AT HARVARD
LONGWOOD NUTRITION SEMINAR 2017-2018

Medical Education Center, Harvard Medical School
260 Longwood Avenue, Cannon Room (Building C1) Boston, MA
12:00 – 1:00 PM 1st Tuesday of Month* (Lunch will be served at 11:30 AM)*

March 6, 2018 **Nancy Krebs, MD, MS**
University of Colorado Denver - Anschutz Medical Campus
Topic to be determined

Supported by the Conrad Taff Educational Fund, Harvard Medical School and Mead Johnson Nutrition
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