HARVARD T.H. CHAN | SCHOOL OF PUBLIC HEALTH

NUTRI NEWS

The Department of Nutrition

December 2020

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The End of Year Holiday Message from Dr. Frank Hu

Dear Members of the Nutrition Department:

As 2020 draws to a close, I would like to extend my sincere thanks to all of you for your steadfast support and commitment to our department. You have demonstrated outstanding flexibility and resourcefulness during what have been unprecedented times and have risen to meet extraordinary challenges head-on this year. In spite of this, the department has managed to forge ahead and the past year has been filled with many different accomplishments and activities. Last year we launched a brand new 65-credit program offering a **MPH degree in Nutrition** designed to extend the reach of our education beyond research into clinical settings and public health organizations. The first cohort of the students in this program will officially graduate in Spring 2021.

The Nutrition Department has been forced to alter many of its existing activities and adapt to changes in light of the COVID-19 pandemic. Six of our doctoral students graduated in a virtual Convocation ceremony on May 28, 2020—the first time in Harvard's history that it did not hold Commencement. Our faculty and researchers have shifted their focus to COVID-related issues: ***Drs. Erica Kenney, Eric Rimm,*** and other HSPH researchers are addressing serious food insecurity experienced by millions of children who relied on school meals. ***Drs. Qi Sun*** and ***Jorge Chavarro*** have collected valuable health-related data from nurses in our large cohort studies. ***Dr. Josiemer Mattei*** and colleagues have established a national COVID-19 syndromic surveillance system allowing the surveillance of signs and symptoms, as well as management, of COVID-19, by the general population of the United States.

The Department continued to expand its other outreach activities. In January the Department held a symposium titled **Red Meat, Meat Alternatives, & Beyond: Health Environment, Policy, and the Media,** which explored both red meat and meat alternatives in the context of broader challenges for conducting, implementing, and communicating public health research, policy, and guidelines. In honor of the 50th Anniversary of the White House Conference on Food, Nutrition, and Health, a report was released to make policy recommendations for combating diet-related disease, reducing disparities, and creating a more sustainable food system. The report was authored by a 16-member report workgroup, co-chaired by ***Dr. Walter Willett***, Professor of Epidemiology and Nutrition, and ***Jerold Mande***, Adjunct Professor of Nutrition at HSPH.

Our staff, students, postdocs, researchers, and faculty have been widely recognized for their outstanding work. ***Brett Otis***, Nutrition Communications & Project Manager, received the Harvard TH Chan School's 2020 Winter ACE Award- Acknowledging Commitment and Excellence. ***Jun Li***, Research Scientist, received the *Scott Grundy Fellowship Award for Excellence in Metabolism Research* at the 2020 American Heart Association Epi | Lifestyle Scientific Sessions that was held in Mar 3-6 2020 at Phoenix. ***June O'Neill***, Research Data Analyst for ***Dr Josiemer Mattei's*** research group, has been awarded the Harvard Chan School Student Association Staff Recognition Award as part of the 2020 Graduation Ceremony. ***Dr Lorena Pacheco***, postdoctoral Research Fellow, has been awarded a Yerby Fellowship under the **Harvard Chan Yerby Fellowship Program. *Dr Andrea A Lopez-Cepero***, Postdoctoral Research Fellow, was selected as a 2020 Health Disparities Research Institute Scholar.

Dr Frank Sacks, Professor of Cardiovascular Disease Prevention, has been elected to receive the Distinguished Scientist Award of the American Heart Association. ***Kripa Jalan,*** MPH student, was selected for the Harvard Innovation *Labs Fall 2020 i-lab Venture Program* cohort. Her project is **Burgers to Beasts. *Aviva Musicus***, a recent graduate in the Public Health Nutrition PhD Program and now a postdoctoral researcher, was named to Forbes magazine's 2021 "30 Under 30" list in the health care category.

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Looking ahead to 2021, there are reasons for optimism as COVID-19 vaccines have increased the expectations that we will be able to gradually return to our normal activities. Although we can see a light at the end of the tunnel, the ride will be a long one. So during this holiday season, it is critical to stay vigilant with COVID precautions. It has been a privilege and honor for me to work closely with so many talented and dedicated faculty, staff, and students over the past truly remarkable year, and I look forward with enthusiasm to the new year ahead.

Best wishes for a safe, healthy, and joyful holiday season!

Frank Hu
Chair, Department of Nutrition

NEWS FROM AROUND THE NUTRITION DEPARTMENT

Seven from Nutrition Faculty Recognized Among World's Most Influential Researchers

Seven faculty members or researchers affiliated with Harvard T.H. Chan School of Public Health's Nutrition Department have been named among the world's most influential researchers over the past decade. The annual list of Highly Cited Researchers from Clarivate Analytic's Web of Science Group includes faculty

from around the world whose papers have been cited most often by their peers—in the top 1% of citations for a chosen field or fields.

Three of four Harvard Chan School faculty were identified as having exceptional performance across several fields: **Edward Giovannucci, Frank Hu, Walter Willett, and David R. Williams**.

Worldwide, 6,389 researchers were named to the 2020 "highly cited" list. Those affiliated with the Nutrition Department include:

Alessio Fasano, professor in the Department of Nutrition
Edward Giovannucci, professor of nutrition and epidemiology
Frank Hu, Fredrick J. Stare Professor of Nutrition and Epidemiology and chair, Department of Nutrition
Miguel Martinez-Gonzalez, adjunct professor of nutrition
Eric Rimm, professor in the Departments of Epidemiology and Nutrition
Meir Stampfer, professor of epidemiology and nutrition
Walter Willett, professor of epidemiology and nutrition
From: https://www.hsph.harvard.edu/news/hsph-in-the-news/harvard-chan-school-faculty-recognized-among-worlds-most-influential-researchers-2/

AWARDS

Dr Josiemer Mattei, Donald and Sue Pritzker Associate Professor of Nutrition, recently received the NORCH (Nutrition Obesity Research Center at Harvard) Mentoring Award for Inclusion and Diversity Award. The NORCH Mentoring for Inclusion and Diversity Award recognizes a faculty member who has provided meaningful, sustained membership to young investigators from underrepresented in medicine (URM) backgrounds in the fields of nutrition, obesity, and metabolism.

Dr Aviva Musicus, Research Fellow NCI, was featured as an honoree in *Forbes* 30 Under 30 in 2021 Healthcare. ***Forbes* 30 Under 30** is a set of lists issued annually by *Forbes* magazine and some of its regional editions. The American lists recognize 600 business and industry figures, with 30 selected in twenty industries each. Asia and Europe also each have ten categories for a total of 300 each, while Africa has a single list of 30 people. *Forbes* hosts associated conferences and a section of its website called 30 Under 30. Aviva is a recent doctoral graduate from Dept. of Nutrition and now a postdoctoral research fellow at the Harvard T.H. Chan School of Public Health, where she studies how food-related policy affects human health and behavior. She is an expert in food label design and her research helped inform a new law in the city of Philadelphia regarding sodium labeling.

INNOVATIONS

DR SHEILA ISANAKA TESTS A NEW APPROACH TO TREAT SEVERE ACUTE MALNUTRITION

Severe acute malnutrition—a condition often caused by acute food shortage or infection—affects at least 50 million children each year, most under the age of 2. Although many with this life-threatening condition can be treated in outpatient health centers, only 1 in 10 children in need receive treatment each year. The current model of care is effective but expensive, and requires regular visits to the health center which can be time-consuming for both staff and families. In some areas, caregivers may walk several hours each way to get their children the care they need.

Is there another model of treatment that can increase access and save lives while reducing the burden on health center staff and families? To explore this question, ***Dr Sheila Isanaka,*** Assistant Professor, with support from Epicentre, Médecins Sans Frontières, and The Children's Investment Fund Foundation, launched a study in Sokoto, Nigeria to test a new approach. She discusses her approach in this short video: https://www.hsph.harvard.edu/nutrition/2020/11/11/testing-new-approach-treat-severe-acute-malnutrition/

LAUREN DOUGHERTY RUNS VIRTUAL 5K TO RAISE $64,164 FOR UNDERGRADUATE FINANCIAL AID

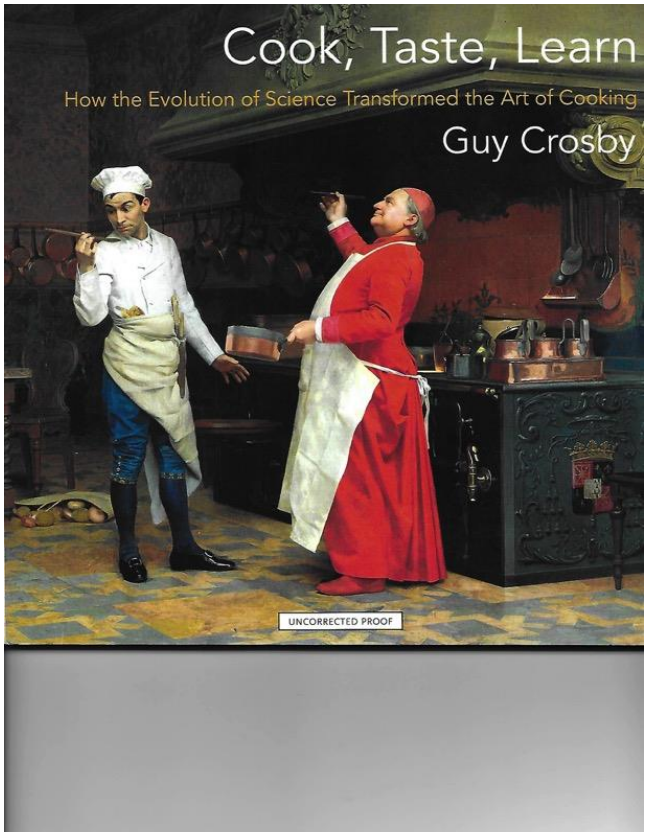
Lauren Dougherty, Research Dietitian, participated in the Harvard Alumni Association's *Harvard Moves* event by running a virtual 5K race. In total, **2,**609 Harvard community members participated in this event over four days, representing 90 countries and all 50 states, plus Washington, D.C., and Puerto Rico. They ran, walked, biked, hiked, swam, and rolled—and together these alumni covered 10,939 miles as a community, raising $64,164 for undergraduate financial aid.

Have you found a way to give back to your community during these covid times? Please share your experience with *NutriNews.* We'd love to print it!

Holiday Message from Dr Guy Crosby

On Friday, December 4, ***Dr. Guy Crosby***, Adjunct Associate Professor, presented an invited Zoom lecture on his new book for the *Boston University Jacques Pépin Lecture Series on Food and Wine*. Guy's book, "Cook, Taste, Learn – How the Evolution of Science Transformed the Art of Cooking", was published early in the year by Columbia University Press. Unfortunately, Guy's health and the onset of the coronavirus pandemic prevented promotion of the book until very recently. In February Guy was diagnosed with a rare combination of multiple myeloma (a cancer of the red blood cells) and cerebral amyloid angiopathy (an inflammation of the brain). The illness made it physically and mentally difficult to spend any time responding to requests for publicizing the book, as much of the spring and summer months were spent receiving treatment in the Beth Israel Deaconess hospital.

According to Crosby, "The Pépin lecture went very well and represents an important milestone in my recovery. I could not have reached this stage of recovery without the incredible help of my wife Christine, who has made more than 65 trips driving me to the hospital for treatment and making sure I take all of my dozen or more daily medications. I would like to wish everyone in the Nutrition Department a successful, healthy, and happy new year, especially all of my students in Nutrition 209."



MORE NUTRITION NEWS

Substituting Plant Protein Sources for Red Meat may Lower Risk of Coronary Heart Disease

(by Dr Laila Al-Shaar, Visiting Scientist)

In controlled feeding studies, red meat consumption increased LDL cholesterol compared with healthy plant protein sources, and in several studies high consumption of red meat, especially processed red meat, was associated with higher risk of mortality and major chronic diseases including the coronary heart disease (CHD).

In a new study by ***Laila Al-Shaar, Ambika Satija, Dong (Daniel) Wang, Eric Rimm, Stephanie Smith-Warner, Meir Stampfer, Frank Hu, and Walter Willett***, the authors examined the association between red meat intake and the risk of CHD among participants of the Health Professionals Follow-Up Study cohort and studied whether the substitution of other protein sources for red meat was associated with a lower CHD risk. In the study entitled "Red Meat Intake and Risk of Coronary Heart Disease Among US Men; a prospective cohort study", 43,272 men who were free of cardiovascular diseases or cancer in 1986 were followed up until 2016, and their dietary intake was updated every four years. Compared to men with low intake of red meat, men with a higher intake of red meat were at 11-15% higher risk of developing CHD. Substituting plant protein sources (nuts, legumes, and soy) for red meat was associated with 14-17% lower risk of CHD. These associations were stronger among older men. In addition, substituting whole grains and dairy products for total red meat and eggs for processed red meat were also associated with lower CHD risk. These findings support a health benefit of limiting red meat consumption and replacement with plant protein sources. Further research on the substitution of dairy products and egg intake for red meat is needed.

Al-Shaar L, Satija A, Wang DD, et al. Red meat intake and risk of coronary heart disease among US men: prospective cohort study. *BMJ* 2020;371:m4141.

See also:

https://www.bmj.com/company/newsroom/replacing-red-meat-with-plant-foods-may-reduce-the-risk-of-heart-disease/;

https://www.insider.com/heart-disease-risk-switching-meat-for-eggs-dairy-grains-2020-12

Lipid Profiles and Heart Failure Risk: Results From Two Prospective Studies

Dr. Clemens Wittenbecher, a postdoctoral research fellow who is working with ***Dr. Frank Hu***, published a study to investigate the association of comprehensive plasma lipidomics profiles with heart failure risk in ***Circulation Research***. The study was based on the PREDIMED-trial and EPIC-Potsdam cohort. The study found that baseline plasma concentrations of diacyl phosphatidylcholine C16:0/C16:0 and ceramide C16:0 were associated with higher heart failure risk in 2 independent cohorts. Network analysis revealed additional associations of interrelated lipid patterns with heart failure risk, including clusters of sphingolipids, diacyl phosphatidylcholines, plasmalogens, diacylglycerols, and triacylglycerols. In both study cohorts, the weighted lipid scores based on these network-clusters were strongly associated with heart failure risk. Our study establishes for the first time a link between circulating lipidomics profiles at baseline and subsequent occurrence of heart failure. These results encourage mechanistic studies into the biological role of the selected lipid predictors in heart failure etiology and suggest that lipid metabolites may improve risk prediction and facilitate risk stratification for targeted heart failure prevention.

Reference:

Wittenbecher, Clemens, Fabian Eichelmann, Estefanía Toledo, Marta Guasch-Ferre, Miguel Ruiz-Canela, Jun Li, Fernando Arós Borau, Chih-Hao Lee, Liming Liang, Jordi Salas-Salvadó, Clary B Clish, Matthias B Schulze, Miguel Angel Martínez-González, and Frank B Hu. "Lipid Profiles and Heart Failure Risk: Results from Two Prospective Studies." *Circulation Research;* (https://dx.doi.org/doi:10.1161/CIRCRESAHA.120.317883).

Research Fellow Will Work with New Danish Cohort in Copenhagen

Dr Albert Salas-Huetos, Research Fellow, has received the ESHRE Travelling Fellowship to go to Copenhagen University Hospital and work with a Danish cohort under the supervision of ***Dr Jorge Chavarro***, Associate Professor (from Harvard) and Dr Niels Jorgensen (from Copenhagen).
The team aims at identifying the associations of nutrients, foods and dietary patterns with testicular function in the first north-European cohort of this type, the Danish Young Men's Study. The Danish Young Men's Study includes cross-sectional data from young Danish men from the general population recruited between 2012 and 2017 at compulsory examinations to determine their fitness for military service. The team also aims to replicate some of the published papers in two parallel cohorts in the United States (Rochester Young Men's Study) and a Spain (Murcia Young Men's Study). The Project will be performed at the Department of Growth and Reproduction, Rigshospitalet, Copenhagen under the supervision of Dr. Niels Jørgensen, who has a broad experience in andrology, reproductive biology and fertility and has been working in human cohorts for several years.

Despite its potential influence on sperm quality and function, Assisted Reproductive Techniques (ART) outcomes and offspring health, the relationship between nutrition (dietary patterns, foods, and nutrients) and testicular function (sperm quality and reproductive hormonal levels) is still poorly understood. Therefore, the Salas-Huetos' project represents an innovative challenge in humans. This cohort is a unique opportunity for such a project since the data have been collected from a big representative sample of the men population with no selection based on the exposure nor fertility status. The completion of this project can provide a more comprehensive vision of the implications of male diet and testicular function because will be the first of its kind in north Europe and will unfold the answer of a question that the

Danish public has been concerned about. Thus, the project will be important and may have policy implication in Denmark and Europe.

PUBLICATIONS

Dr David Eisenberg, Director, Culinary Nutrition and Adjunct Associate Professor of Nutrition, has published the following papers. The first summarizes the recent Teaching Kitchen Research Conference (which attracted 2571 registrants from 79 countries!); and, the second provides ideas for "teaching kitchens of the future".

Eisenberg, D. M. and Imamura, A. (2020). "Teaching Kitchens in the Learning and Work Environments: The Future Is Now." Glob Adv Health Med **9**: 2164956120962442.

Eisenberg, D. M. (2020). "Teaching Kitchen Research Conference November 11-12, 2020." J Altern Complement Med **26**(11): 971-975

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 **1:00-1:50 pm** and are free and open to the public. Because of COVID-19, the seminars have been presented via Zoom since March of this past spring, and this zoom format will continue in the fall of 2020. A zoom link for viewing will be available one week prior to each seminar.

Due to Winter Recess, there will be no Monday Nutrition Seminars until January 25, 2021.

NUTRITION SOURCE UPDATES

Holiday gift guide
Still a few items left on your holiday shopping list? From olive oil to an herb seed kit, here are 17 creative gift ideas:
https://www.hsph.harvard.edu/nutritionsource/2015/12/03/healthy-gift-guide-17-ideas-for-giving-the-gift-of-health/

Develop a "sugar strategy" for healthy holiday eating
Shared meals are a highlight of the holidays. And while it's easy to overindulge when there are so many delicious dishes on the table, desserts can be especially easy to overeat:
https://www.hsph.harvard.edu/nutritionsource/2013/12/20/develop-a-sugar-strategy-for-healthy-holiday-eating/

Food feature: Winter Squash
Along with being uniquely beautiful in a variety of colors and shapes, the firm flesh of winter squash is ideal for soups and other warming dishes:
https://www.hsph.harvard.edu/nutritionsource/food-features/winter-squash/

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/)

Winter Session Course NUT 250

Dietary Intervention Trials: Study Design & Novel Technologies

Dietary intervention trials have played a key role in establishing the causality between diet or nutrient intake and health outcomes and in the determination of dietary requirements and levels of supplementations to achieve specific outcomes. In this course, we will discuss the concepts and elements of nutritional RCTs, how to design, conduct, analyze, and interpret nutritional RCTs through case studies, and will address novel challenges/opportunities in nutritional RCTs. New technologies such as nutritional omics and the concept of personal or precision nutrition will be discussed. Students will need to read the relevant scientific literature prior to the lectures. Attendance and participation in lectures are required. Upon successful completion of the course, students will have a better understanding on how to plan and design a nutritional RCT and will be familiar with different types of outcome measurements and different analytical approaches.

Instructors: Dr. Iris Shai and Dr. Jun Li
Jan 4th – 8th 2021 Mon-Fri 8 – 9:45 am and 11:30 am -1pm eastern