HARVARD T.H. CHAN | SCHOOL OF PUBLIC HEALTH

NUTRI NEWS

The Department of Nutrition

October 2020

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DR HONG ZHANG PRESENTS LIVER CANCER RESEARCH AT TWO ANNUAL MEETINGS—AND GIVES SOME ZOOM TIPS!

Dr Xuehong (Hong) Zhang is an Assistant Professor of Medicine at HMS and an Assistant Professor in the Department of Nutrition, who recently presented at two large cancer conferences. He shares his experiences with speaking remotely as well as his current research activities below.

NN: Dr Zhang, I understand that you recently gave presentations via Zoom at two large annual cancer meetings. Can you tell us which organizations asked you to present?

HZ: On behalf of my other co-authors, I have recently presented two studies at the 2020 Annual Meeting of the American Association of Cancer Research (AACR) and the International Liver Cancer Association (ILCA) Annual Meeting.

NN: What were the topics of your presentations? What were your research findings?

HZ: I am a cancer epidemiologist with training in clinical medicine and nutrition. My research focuses on colorectal and liver cancers. In my recent presentations at AACR and ILCA, I presented two studies on liver cancer using the data from the Nurses' Health Study and the Health Professionals Follow-up Study, two large prospective well-characterized cohorts. In the US, liver cancer has one of the most rapidly increasing incidence rates among both men and women. Liver cancer is an increasing health burden and there are many important research questions to be addressed. Although it is believed that liver cancer is largely attributable to chronic hepatitis B virus infection and hepatitis C virus infection, the etiology of liver cancer remains poorly understood in the US, where chronic hepatitis infections are relatively low but metabolic diseases such as obesity and diabetes are endemic. Therefore, we are faced with a big puzzle that nearly 35% US liver cancer cannot be explained by the known risk factors including the chronic hepatitis infections and metabolic diseases. Additionally, liver cancer is characterized by aggressive growth, high rates of metastasis, and recurrence. Most liver cancer patients are diagnosed at late stage and die within one year, whereas prognosis dramatically improve for those with asymptomatic, localized liver cancer. However, we lack minimally invasive biomarkers that can detect liver cancer at a stage when interventions are potentially curative. Hence, my research interest for liver cancer is two-fold: 1) identification of new and modifiable risk factors to prevent the development of liver cancer, and 2) conduct -omics research such as proteomics to identify biomarkers that could inform early detection and diagnosis of liver cancer. For these talks, I have presented on behalf of my research team two studies by sharing some new protective or risk factors we identified for liver cancer.

The first study is titled "Brisk Walking and Hepatocellular Carcinoma Risk", presented at the AACR Annual Meeting II (June 22-24, 2020). We found that moderate-to-intensity activity, especially brisk walking, was associated with reduced risk of liver cancer among U.S. men and women. To our knowledge, this is the first study showing an inverse association between brisk walking and liver cancer risk. If confirmed, brisk walking might serve a feasible way for liver cancer prevention.

The second study is titled "Inflammatory And Insulinemic Potential Of Diet And Lifestyle With Risk Of Hepatocellular Carcinoma", presented at the ILCA Annual Meeting (September 11-13, 2020). To our knowledge, this is the first study evaluating the inflammatory and insulinemic potential of the whole diet with liver cancer risk. We found that inflammation and insulin resistance/hyperinsulinemia are potential mechanisms linking dietary or lifestyle factors and liver cancer development. Strategies to reduce or avoid inflammatory and insulinemic dietary or lifestyle pattern may therefore be a potential means of primary prevention for liver cancer.

I want to take the opportunity to thank the entire research team, especially ***Prof. Edward Giovannucci*** and the lead authors ***Drs. Xiao Luo*** and ***Wanshui Yang***.

NN: How large were these two conferences? Who were the participants?

HZ: The AACR Annual Meeting is the largest annual meeting on Cancer research in the United States. For example, in 2020 the new AACR President Antoni Ribas noted that this fantastic meeting featured over 600 speakers, 125 sessions, 14 concurrent channels, and over 4,000 abstracts. Topics cover the latest discoveries across the spectrum of cancer research—from population science and prevention; to cancer biology, translational, and clinical studies; to survivorship and advocacy—and highlights the work of the best minds in research and medicine from institutions all over the world.

The ILCA offers the leading international multidisciplinary forum for liver cancer specialists around the latest innovations in research and care. In 2020, it has been estimated to have ~700 participants, from 48 countries, 70 lectures and oral presentations, and 269 abstracts (https://www.ilca2020.org/).

NN: Were these virtual conferences? Were your lectures pre-recorded?

HZ: Yes. Both were virtual meetings and the lectures were pre-recorded.

NN: Did you encounter any technical problems during your presentations?

HZ: Both presentations went well. For the Q&A session in the ILCA meeting, the only issue was that they could not see me due to connection issues.

NN: What was the nature of these connection issues?

HZ: I was told by ILCA that they have had some similar issues for people who used Mac laptops.

NN: Do you know if ILCA was ever able to resolve these issues?

HZ: Not resolved during the Q&A session.

NN: What did you learn from the experience and what would you suggest to other speakers going forward?

HZ: We are all adapting to virtual meetings, especially the virtual meeting with partners across the country and in different parts of the world. "Test run" with the meeting's technical team and some partners is a good idea. I would suggest to other speakers to check their laptop functions, cameras, microphones, and Zoom/Webex software functionality before the meeting to ensure everything runs smoothly. Also, it's a good idea to have a phone available, just as a back-up option, in case dial-in is the only way to participate the meeting.

NN: If your talks were pre-recorded, do you have any links to your talks that you would like to share?

HZ: I did not get the link yet; but if possible, please share the link with my recent Monthly Nutrition Seminar entitled "The Etiology, Epidemiology, and Prevention of Liver Cancer".

https://harvard.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=0b545858-aa87-4bdf-b5bc-ac4c011a04e0

Five Questions with Erica Kenney

Our pilot grant awardee discusses her research on preventing childhood obesity.

By Hardeep Ranu
October 27, 2020

Erica Kenney teaching at home via Zoom.

Erica Kenney, ScD, is an assistant professor at the Harvard T.H. Chan School of Public Health and an awardee of our "Primary and Secondary Prevention of Eating Disorders" pilot grant through our Community Engagement program.

Why did you apply for the pilot grant?

Most of my work focuses on nutrition promotion and a fair amount of it also focuses on childhood obesity prevention. One of the things that cuts across eating disorders and obesity is the issue of weight stigma. I've done a couple of fellowships that looked at student weight stigma in school settings and there's not many funding opportunities in this topic area, so this seemed like a great opportunity.

My degree is also in social and behavioral sciences and I'm interested in the social determinants of health. One of the things that we know about weight is that education is an important determinant of health across all types of outcomes, and is certainly linked with obesity and chronic disease. I think eating disorders, disordered weight control, and obesity come from a similar kind of root problem, they share a lot of their determinants.

When does weight stigma start for children while in school?

We know that teasing can start even among young children. There have been some psychology studies that have found that children as young as four, if you show them pictures of larger bodies versus thinner bodies, they'll prefer the thinner ones, and they'll attribute negative adjectives towards something they perceive as fat.

"I think eating disorders, disordered weight control, and obesity come from a similar kind of root problem, they share a lot of their determinants."

We published a paper a couple of years ago that looked at test scores versus teacher ratings of ability for children based on their body size. What we found was that even as young as fifth grade, if a child gained excess weight over time, their test scores usually would stay stable, but their teacher ratings would drop, so there's some evidence that it happens, and it happens pretty young.

What about the effect on a child's education for those who experience weight stigma?

If your educational opportunities are limited because of your weight status then you get into a vicious cycle where when you are discriminated against in your education then you aren't able to attain as much education, and now you have a poor education, which then worsens your health over time. It's something I'm interested in and there have been some heartbreaking studies looking at the educational trajectories and economic trajectories, particularly of women in larger bodies as they are more likely to end up in poverty, be unemployed, or earn less.

You mentioned that obesity and disordered eating and weight stigma share a root problem. What do you think that root problem is?

Well, here in the U.S. we have a dysfunctional food system and food culture, especially in terms of the types of foods that are most commonly available, and the kinds of foods that are marketed to us. This then leads to having unhealthy food that is cheap, widely available, and heavily marketed. The marketing is effective in telling you what you should be eating, or this is the fun thing to eat, or the tasty thing to eat, or this is going to make you feel good if you eat this.

Another problem is that we have this culture of personal responsibility and so if you do gain weight from eating these foods we say, "it's your fault for gaining weight." In the U.S., we're not set up to have a healthy attitude toward food, and healthy foods aren't accessible and affordable for everybody. This then creates an unhealthy system which promotes unhealthy attitudes toward food.

For kids, there's a flood of excess calories in their diet. It's become normal to give kids large portions of unhealthy foods. Kids' meals in restaurants generally are chicken nuggets, or french fries, hot dogs, hamburgers, or pizza. We don't see these types of foods in other cultures, but in the U.S. we say that it's fine for kids to eat highly palatable, high sugar, high fat, low fiber, and low nutrient food.

What about this field of research caught your eye?

My undergraduate degree was in education and I started out wanting to be an elementary school teacher. Most of my work, for a long time, was focused on designing educational programs. While I was working in a couple of schools, I would notice what the school kids were being fed, what was available to them, and some of the health problems that they were experiencing. I became more concerned with the health aspect of it than the educational aspect. Not that the education component isn't unimportant, but it was the health aspect that gripped me. So, I went to get my MPH with the goal of trying to work toward improving child nutrition, especially in school and childcare settings.

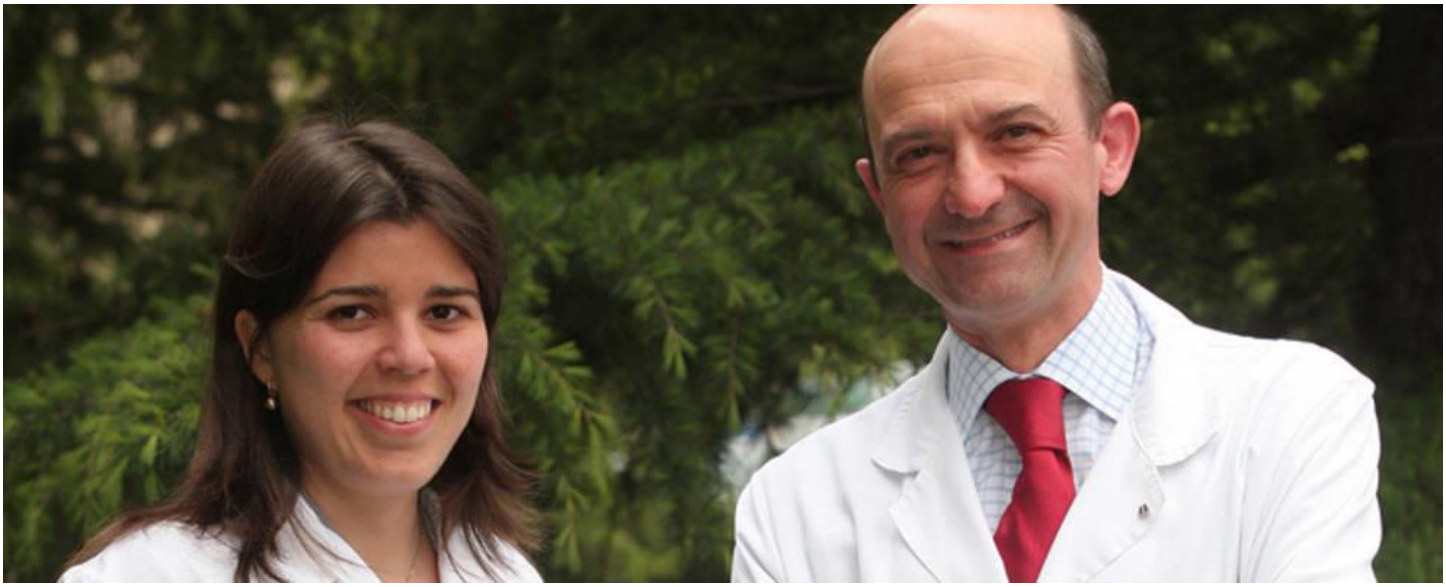
Reprinted from: https://catalyst.harvard.edu/news/article/five-questions-with-erica-kenney/

NEWS FROM AROUND THE NUTRITION DEPARTMENT

AWARDS

Dr Maira Bes-Rastrollo, former visiting scholar with ***Dr Frank Hu***, Professor and Chair of the Department of Nutrition, won the Best Abstract Prize for her abstract entitled:

"Lifestyle-related factors and total mortality in a Mediterranean prospective cohort" at the 2020 16th World Congress on Public Health. ***Dr Miquel A Martinez-Gonzalez***, Adjunct professor of Nutrition was a co-author. The prize was for the highest-scoring abstract out of 4,024 abstracts submitted. The best abstract award includes one waiver of conference fee for the 14th EPH Conference in Dublin, Ireland 10 – 13 November 2021.



PUBLICATIONS

Abrania Marrero, doctoral student, and ***Dr Josiemer Mattei,*** Donald and Sue Pritzker Associate Professor of Nutrition, recently published a paper in *Public Health Nutrition*. Their findings indicate that those who intentionally purchase locally in Puerto Rico consume more fruit/vegetables, dietary fiber, and have a healthier fat profile than those with a more imported diet. Local, plant-based foods such as roots, avocados, and beans are a part of agriculturally-based diets on the island, traditions being increasingly replaced by an energy-dense imported food supply. Food import dependence also amplifies the risk of periodic food insecurity in Puerto Rico and elsewhere in the Caribbean, particularly in the aftermath of increasingly occurring natural disasters. In contrast, promoting local food production in Puerto Rico and similar food systems may simultaneously bolster nutritional health, climate resilience, and self-determination.

> Marrero A, Tamez M, Rodríguez-Orengo JF, Mattei J. The association between purchasing locally produced food and diet quality among adults in Puerto Rico. Public Health Nutrition. Cambridge University Press; 2020:1–10.

To access full article: https://doi.org/10.1017/S1368980020003134

Dr Christopher Golden's team, led by ***Dr Alon Shepon***, Postdoctoral Research Fellow, published a paper in *Nature Food.* Their findings show that aquaculture presents an opportunity to meet local demand, but it also places pressure on natural resource inputs and causes a range of environmental impacts. The authors examined whether current aquaculture systems in Bangladesh can be reoriented to address prevailing nutritional deficiencies while minimizing these environmental impacts. Current fish farming practices, even when optimized, cannot fully supply the same essential micronutrient densities of zinc, iron and calcium as wild-caught fish. However, when the proportion of highly nutrient-dense small indigenous fish species (SIS) was increased to at least 30% of the total output in any of the 14 aquaculture production systems analysed, these systems were able to meet or surpass the nutrient densities of average wild-capture fisheries. Nutrition-sensitive aquaculture that provides greater human

health benefits and minimizes environmental impacts is a key societal challenge that requires targeted interventions and supportive policies.

Shepon, A., Gephart, J.A., Henriksson, P.J.G., Golden, C.D., *et al.* Reorientation of aquaculture production systems can reduce environmental impacts and improve nutrition security in Bangladesh. *Nat Food* **1,** 640–647 (2020). https://doi.org/10.1038/s43016-020-00156-x

- Link to the publication

Dr Josiemer Mattei, Donald and Sue Pritzker Associate Professor of Nutrition, recently published the following article in AJE:

Josiemer Mattei, Katherine L Tucker, Luis M Falcon, Carlos F Ríos-Bedoya, Robert M Kaplan, H June O'Neill, Martha Tamez, Sigrid Mendoza, Claudia B Diaz-Alvarez, Jonathan E Orozco, Edna Acosta, José F Rodríguez-Orengo. **Design and Implementation of PROSPECT: Puerto Rico Observational Study of Psychosocial, Environmental, and Chronic Disease Trends;** American Journal of Epidemiology, kwaa231, https://doi.org/10.1093/aje/kwaa231
Published: 21 October 2020

You can find the link here: https://academic.oup.com/aje/advance-article-abstract/doi/10.1093/aje/kwaa231/5933813?redirectedFrom=fulltext

Dr Miquel A Martinez-Gonzalez, Adjunct Professor of Nutrition, published in September a 300-page book for the general public in Spanish with Planeta (the 7th top publisher in the world) entitled "¿QUÉ COMES?" (*What do you eat?*). It has attracted a considerable amount of attention in the Spanish media during the last 3-4 weeks (>50 interviews on tv and radio and in the newspapers). It was among the top 10 books sold in Spain last Saturday.

See: https://www.planetadelibros.com/libro-que-comes/318668

PRESENTATIONS

A National Geographic Documentary Special Event called *Virus Hunters* will air on Nov. 1st 9pm Eastern/8pm Central on the National Geographic Channel. The documentary chronicles the journey of ***Dr Chris Golden***, Assistant Professor of Nutrition and Planetary Health, and **James Longman** (ABC foreign news correspondent) during the COVID-19 pandemic as they travel to Turkey, Liberia, and the US Midwest to meet with frontline researchers, gather information, and learn what it takes to stop the next pandemic. The documentary will air in 174 countries and 43 languages. The trailer can be found here: https://twitter.com/natgeochannel/status/1319367806622846994?s=21

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.

Our November speakers will be:

Nov 2 – *Dr Michael F. Jacobson, Ph.D.,* Co-founder and Senior Scientist, Center for Science in the Public Interest – *"Salt Wars: The Science and Politics of Salt"* – **NGHP**

Nov 9 - *Mr Jerold Mande*, Senior Advisor to the President, Center for Science in the Public Interest; Adjunct Professor of Nutrition – *"Food and nutrition policy: Current status and future directions."*

Nov 16 - *Professor Lorraine Brennan*, University College Dublin, School of Agriculture and Food Science – *"Metabolomics and food intake: current status and future outlook"*

Nov 23 - *Dr Edward Giovannucci*, Professor of Nutrition and Epidemiology, Department of Nutrition – TBD

Nov 30 - *Dr Sam Molsberry, PhD,* Postdoctoral Research Fellow, Department of Nutrition – *"Dietary risk factors for Parkinson's disease"*

Nutrition Department's Diversity & Inclusion Committee Offers New Resources!

Nutrition's Diversity and Inclusion Committee met in October and would like to share training and workshop resources with the department. Please see below:

The Harvard Chan School Office of Diversity, Inclusion and Belonging has links to resources and trainings here**-** https://www.hsph.harvard.edu/diversity/

You can search by topic in the Harvard Training Portal which also includes LinkedIn Learning courses. There are a number of diversity and inclusion trainings offered here- https://trainingportalinfo.harvard.edu/

The Harvard DI Office has a calendar of events on their website- https://dib.harvard.edu/calendar

NUTRITION SOURCE UPDATES

Stress and health

- Learn more about the impacts of stress on eating patterns and health, and strategies that may help control it: https://www.hsph.harvard.edu/nutritionsource/stress-and-health/

Food feature: Apples

- Does eating one every day really keep the doctor away? Learn about apples and health, and the best types for cooking or enjoying as a fresh snack.
- https://www.hsph.harvard.edu/nutritionsource/food-features/apples/

Spotlight on dairy

- The Nutrition Source's resources on dairy foods have recently been updated, including general review of dairy (https://www.hsph.harvard.edu/nutritionsource/dairy/) and individual food features for cheese (https://www.hsph.harvard.edu/nutritionsource/cheese/), yogurt

(https://www.hsph.harvard.edu/nutritionsource/food-features/yogurt/), and milk (https://www.hsph.harvard.edu/nutritionsource/milk/).

- In response to questions about the nutritional content of plant-based "milks," The Nutrition Source team looked at a sample of options on the market. In general, these beverages have no cholesterol and most have little saturated fat. They also contain no lactose so they may be better tolerated than dairy milk in some people. However, the nutritional content varies widely across types of plant-based milks, as well as among different brands selling similar options. Specific brands may contain more or less of the nutrients depending on if products are fortified, or if added flavors or sweeteners are included. Generally, plant-milks labeled "original" will include added sugars, so look for unsweetened options and be sure to check the Nutrition Facts label and ingredients list so you know what you're buying. *To see the full table comparing the nutritional content of soy, almond, cashew, oat, and other plant-based milks, visit*: https://www.hsph.harvard.edu/nutritionsource/milk/

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/)


Dietary Biomarker Symposium:
Advances, Challenges, and Future
Directions in Food Biomarker Research
Monday, November 16, 2020
8:00AM-2:05PM EST (Irish time: 13:00-19:05)
Event Details & Registration here:
https://www.hsph.harvard.edu/nutrition/dietary-biomarker-symposium-2020/
Co-chaired by:
Qi Sun, Harvard Chan School Of Public Health, Boston, MA
Lorraine Brennan, University College Dublin, Ireland
Jayne Woodside, Queen's University Belfast, Northern Ireland, UK

A Conversation with Christopher Golden, PhD & Kendra Phelps, PhD

Friday, Oct. 30 at 4:30 p.m. ET

To receive a live stream reminder for this event,
visit: **wapo.st/virushunters**

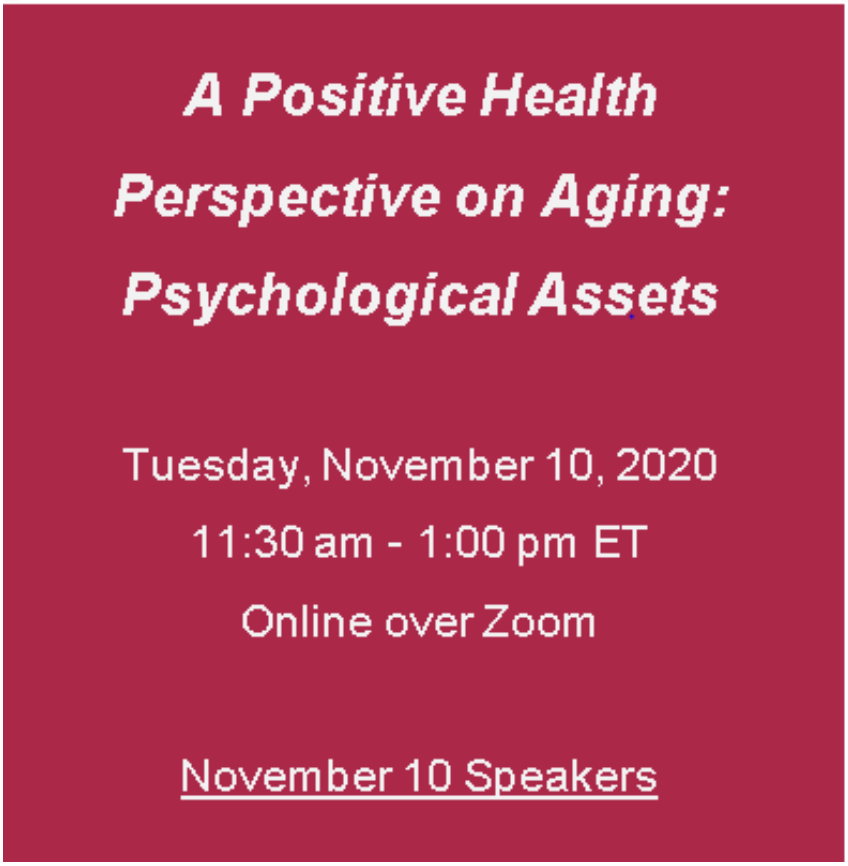
Christopher Golden, PhD
Ecologist & Epidemiologist,
Harvard T.H. Chan School of
Public Health, Nat Geo Fellow

Kendra Phelps, PhD
Field Scientist with
EcoHealth Alliance

Beyond Longevity: Achieving Well-being in Healthy Aging

The Lee Kum Sheung Center for Health and Happiness and the Harvard Center for Population and Development Studies invite you to a **two-day online symposium examining aging from a positive health perspective**.

Expert speakers will discuss our current understanding of the social and environmental factors likely to support healthy aging, the roles happiness and positive mental health may play in physical health and longevity, promising interventions and policy approaches, and ideas for a future research agenda. Harvard Chan faculty **Laura Kubzansky, Lilian Cheung, and Vish Viswanath will moderate**.



Co-moderated by Dr Lilian Cheung

For more information and to register:
https://www.hsph.harvard.edu/health-happiness/event/beyond-longevity-day-2/

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5. Role of RDs, Chefs, Mind Body & Other Instructors
6. Community Outreach Now & Post COVID
7. Agriculture and Sustainable Food Systems
8. International Collaborations

Keynote Speakers

Frank Hu, MD, MPH, PHD
Harvard T.H. Chan School of Public Health

RICHARD ROTHSTEIN, MD
Geisel School of Medicine, Dartmouth

NICOLE FARMER, MD
NIH Clinical Center

RUTHIE SCHWAB & ZOE SCHWEITZER
Global Food Team @ Google

Hosted by: HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH Department of Nutrition | In association with the Teaching Kitchen Collaborative, Inc. | Supported by the National Institutes of Health

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