



NUTRI NEWS

The Department of Nutrition

August 2017

NEW MEMBERS OF THE DEPARTMENT

We would like to welcome the following people to the Department of Nutrition!



Roger Figueroa, PhD, MPH, MSc (Postdoctoral Research Fellow)

Roger Figueroa Bautista is a multi-racial, Afro-Caribbean scholar born in the Dominican Republic and raised in Puerto Rico. His research interests include the role of environmental influences on childhood obesity and energy balance behaviors in low-income contexts. 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. This past June, Roger successfully defended his doctoral thesis and completed a joint PhD/MPH degree program as part of the Illinois Transdisciplinary

Obesity Prevention Program (I-TOPP) at the University of Illinois at Urbana-Champaign. Subsequently, Roger started a postdoctoral research fellowship here at the T.H. Chan School of Public Health working with **Dr. Kirsten Davison** in the Department of Nutrition. Besides his scholarly work, Roger likes to spend time with family, cooking, traveling, sightseeing, and participating in sports. Roger is very excited to be working with his mentor and the rest of the Communities for Healthy Living (CHL) team, and hopes to meet and collaborate with other faculty, postdocs and colleagues in the Department of Nutrition at HSPH.

Marina Norde, PhD (Intern from Brazil)

My full name is Marina Maintinguer Norde. I come from Campinas, a big city in Sao Paulo state, in Brazil. I graduated in Nutrition in 2012 at the University of Sao Paulo (USP), I got my Master degree in Nutrition and Public Health in 2015 and now I am pursuing a PhD in Nutrition and Public Health, both at the USP as well. In Brazil, I am a member of USP Nutritional Genomic and Inflammation Lab, where I develop my research. My main interests are nutritional epidemiology, genetics and inflammation.

I came to the Department of Nutrition of Harvard T. H. Chan School of Public Health to work with **Prof. Edward Giovannucci** and **Dr. Fred Tabung** in the application of the empirical dietary inflammatory index (EDII) to the Health Survey of Sao Paulo database, a cross-sectional population-based study conducted in Sao Paulo city, the biggest city of Brazil. My goal is to verify if EDII is associated with plasma inflammatory biomarkers in the Sao Paulo population and further investigate factors of the Brazilian dietary pattern that can also contribute to systemic inflammation and metabolic outcomes related to it.





Jacqueline Pereira (Intern from Brazil)

My name is Jaqueline Lopes Pereira Franca. I am a nutritionist, PhD student from the Department of Nutrition of the School of Public Health of the University of Sao Paulo, Brazil. My expertise is in Nutritional Epidemiology and my research focuses on diet and obesity and cardiovascular risk factors in adolescents.

I am in the Nutrition Department for an internship with **Professor Josiemer Mattei** with the project Overweight and Cardiometabolic Risk Factors in Adolescents living in São Paulo and in the USA – differences and similarities in diet quality.

NUTRITION IN THE NEWS!

Amanda C. McClain, PhD, MS, NIH Postdoctoral Research Fellow, was selected to participate in the American Heart Association's 43rd Ten-Day Seminar on the Epidemiology and Prevention of Cardiovascular Disease and Stroke. Dr. She attended this program from the end of this July to early August in Tahoe City, CA.

Eric Feigl-Ding, ScD, Research Scientist, received the Mark V Anderson Leadership Award from the Sigma Chi Foundation for developing an early warning system (toxinalert.org) for detecting high water toxicity levels. In this way, he is hoping to prevent another horrifying event of lead poisoning such as that which occurred in Flint, Michigan.

Dr. Majken Jensen, Assistant Professor of Nutrition, and her groups has received an award from the **McLennan Family Fund – Dean's Challenge Grant Program** that will fund a pilot program to systematically compare and evaluate the similarities and differences in complete protein profiles in plasma versus cerebrospinal fluid from healthy elderly people and Alzheimer's patients.

MORE DOCTORS MOVING OUT OF THEIR OFFICES AND INTO THE KITCHEN

An increasing number of doctors and other medical professionals are now taking a hands-on approach to teaching their patients how to eat well and prepare a healthy diet. In fact, many of them are now teaching their patients how to cook! Because poor diet often contributes to other major health problems such as diabetes and cardiovascular diseases, these doctors are creating food pantries next to their medical practices, constructing teaching kitchens, or simply prescribing culinary education programs in an effort to improve overall health and patients' nutrition. In addition, more medical schools are finally implementing nutrition and culinary curriculums in their training programs for doctors and medical students.

Dr. David M. Eisenberg, Adjunct Associate Professor of Nutrition and Director of Culinary Nutrition, has long been in the vanguard of this movement. For example, he helped to start a medical course called Healthy Kitchens, Healthy Lives that was designed to teach doctors how to cook. Since its inception, over 6,000 health professionals have taken his course, which attempts to bridge nutrition science, health care and the culinary arts. In 2014 the Harvard Chan School and the Culinary Institute of America formed a joint venture called the Teaching Kitchen Collaborative. This collaborative now has 32 members, which include universities, hospitals and companies such as Google.

In an August 9, 2017 *New York Times* article, **Dr. Eisenberg** is quoted: "I would love for teaching kitchens to become as commonplace as gyms, and for access to them to be part of our organized health system."

Read the New York Times article: [When the Prescription is a Recipe](#)

To learn more:

<https://www.hsph.harvard.edu/news/hsph-in-the-news/doctors-patients-healthy-cooking/>

[Teaching nutrition in an era of obesity and diabetes](#) (*Harvard Chan School news*)

[More than cooking. Teaching Kitchens as learning labs for life skills](#) (*The Nutrition Source*)

[Crash course in healthy cooking aims to help docs better help their patients](#) (*Harvard Chan School feature*)

For more news, visit the Harvard Chan School website.

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RECENT NUTRITION SERVICE ANNIVERSARIES

The following members of the Nutrition Department have recently completed 10 years of service with our Department:

Qi Sun, Assistant Professor in the Department of Nutrition

Tao Hou, Statistician

SENIOR RESEARCH SCIENTIST JEREMY FURTADO KEEPS ACTIVE MANAGING TWO BUSY LABORATORIES!

By Hilary Farmer



When most people think of the Harvard Chan School's Nutrition Department, they envision a lot of researchers poring over statistical data for their epidemiological analyses, or working to translate science into groundbreaking public policy that will improve diet and lifestyle and prevent disease. But did you know that a great deal of important work is performed on a daily basis right here in our Nutrition laboratories? **Dr. Jeremy Furtado**, Senior Research Scientist, not only manages **Dr Frank Sacks'** research group, but is also the Director of the Nutritional Biomarker Laboratory.

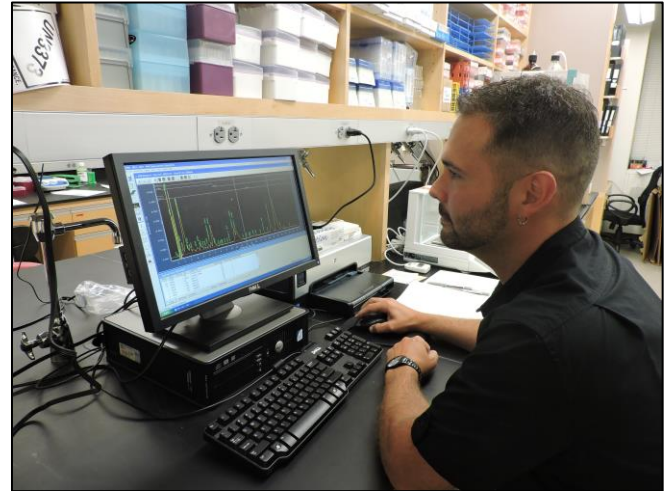
Jeremy began his career at HSPH as a research assistant, then obtained his doctorate in Nutrition while working in the Sacks lab part-time. He continued to work his way up the career ladder as he became, first, a project manager, then a research scientist, followed by a position as senior research scientist—until now where he is Director of the Nutritional Biomarker Lab. He is intensely interested in the science that is being conducted in his labs, continually asking more questions, and thinking about new directions for his scientific research. Let's meet Jeremy as he discusses his exciting lab work now!

NN: **Jeremy, you have been in the Nutrition Department for quite a long time. Would you mind telling us a little about how you got started here and your basic career trajectory up to now?**

JF: *Yes, it's hard to believe that I've just hit the 19-year mark! As they say, time flies when you're having fun! I started as an RA-II back in August of 1998 managing the day to day operations of the Nutritional Biomarker Lab with the intention of getting a year or 2 of lab management*

experience under my belt before heading off to grad school for marine biology. However, after 2 years here I had become very interested in the exciting work being done in our department and decided to apply to the doctoral program here instead. Funny how plans change. I began classes in 2000 and worked my way through the program as a part-time student while working full-time in the lab, defending my thesis 8 years later in 2008. Over the next 10 years post-grad I gradually transitioned from Project Manager to Research Scientist and, more recently, to Senior Research Scientist with the role of Director of the Nutritional Biomarker Lab. If you had asked me 19 years ago where I would be today, I don't think I'd have envisioned anything even remotely resembling that path. But it has all been a really great experience.

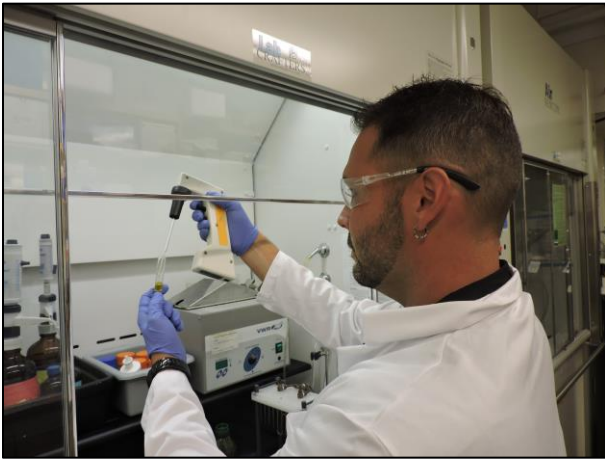
NN: You mentioned that you've managed many projects in the (Dr. Frank) Sacks Lab that utilized immunoaffinity chromatography (IAC) where you were looking at different apolipoprotein subtypes involved in HDL metabolism that could be used for risk prediction. Would you care to elaborate a little on this?



JF: When I started working as **Frank Sacks'** lab manager, his work was mainly focused on apoB-lipoproteins, which includes our well-known nemesis "LDL cholesterol". His team of students and research assistants was looking at the changes in metabolism that occur when certain "accessory" proteins were present on the apoB-lipoprotein complexes, particularly apoE and apoC-III. These changes in metabolism have direct effects on the fate of these lipoproteins and, ultimately, the risk of CHD imparted by them. We also studied the effect of the concentration of apoB-lipoproteins with and without apoC-III on risk of CHD and how diet affects levels of these lipoproteins in the blood, which served as the main focus of my own thesis. Over time, we turned our interest toward HDL, which is sort of the other side of the lipoprotein coin. HDLs are, for the most part, apoAI-lipoproteins and are associated with protection against CHD in epidemiological studies. The general public would know HDL as "the good cholesterol". But paradoxically, on the individual level, high HDL is not always protective and novel treatments that raise HDL very significantly have routinely failed to reduce disease risk. Given the changes in metabolism and disease associations that we found in apoB-lipoproteins elicited by "accessory" proteins, we hypothesized that proteins found on HDL would also drive the metabolism of HDLs and that these HDL subspecies defined by their protein cargo could have very different associations with disease, perhaps explaining the paradox. Immunoaffinity chromatography is the method traditionally used to study these lipoprotein subspecies, but it is costly, time consuming, and can be detrimental to the lipoproteins we want to study. We developed a novel ELISA protocol to allow a quicker, cheaper, and gentler measurement of the subspecies, which allowed us to expand our study to large cohorts.

NN: You also manage a newly-established core lab service center within the Sacks Lab designed to perform novel assays such as the ELISA in an official capacity for various clients, including Harvard and non-Harvard researchers, as well as corporate collaborators such as pharmaceutical companies? How does this work?

JF: There was a lot of interest in the new ELISA protocol that we developed for our own work, so we established a core lab service center to handle projects for other interested researchers. This has enabled a number of collaborations that have helped us to learn more about the relatively new field of HDL subspecies. Working together, we hope this tool will help us to better understand what subspecies are important to CHD risk, to discover why raising HDL cholesterol through certain therapies does not impart protection against disease, and to identify ways to raise increase those most beneficial types of HDL while reducing or eliminating the bad.



NN: On top of that, you have just assumed a new role as Director of the Nutritional Biomarker Laboratory, where your team examines carotenoids & fatty acids in foods & blood samples using chromatography. You also mentioned that you now perform vitamin D assays and have calibrated your results with those from Children's Hospital in a correlation study using our own NHS and HPFS samples. How did the two sets of results compare? Do you plan to expand your operation in the future?

JF: Yes, we have two very well-established assays in our lab that have allowed us to collaborate with researchers around the globe. The antioxidant panel and fatty acid panel have been offered for over 25 years! We're always

looking to expand our offerings to make the most efficient and economical use of our resources. There is much interest in Vitamin D and I was aware that researchers in our department have traditionally sent their samples to Children's Hospital for analysis. It's tough to break continuity with a lab that consistently produces great data such as Children's. Not only do you know you can trust the results, but you want your data to be as comparable as possible over time, and lab-to-lab variability can pose a problem in longitudinal studies. It makes sense for us to keep our research efforts in-house as much as possible for a multitude of reasons. We were able to adopt the exact same protocol used for the standard Vitamin D assay as that offered at Children's and, working with the BWH/Harvard Cohorts Biorepository staff, we performed an extensive validation study within the NHS and HPFS cohorts that provided concrete evidence that our data are identical to the data produced by the Children's Hospital Lab. We look forward to being able to assist researchers in our department and beyond with their Vitamin D assay needs. More recently we've developed an assay for tyrosol and hydroxytyrosol, plasma and urine metabolites of wine and olive oil consumption. And we look forward to working with researchers in our department to develop other assays that may be of interest.

NN: Do you also perform other measurements for members of the Nutrition Department in their various cohort studies? This sounds like a win-win situation for both of you!

JF: Yes, we do a lot of work with researchers within our department – even some former members who have moved on to other institutions. As I mentioned before, there are a number of benefits to keeping the work in-house. Financially, we are generally able to offer better pricing than other labs because we only charge cost. And keeping Nutrition Dept money here in our own department makes financial sense. Being a smaller lab, we don't have the long sample queues that can sometimes pose problems with grant timelines. Samples oftentimes can be physical walked from their freezer to ours, avoiding the costs and the dangers of shipping. And people know us, and more importantly know that they can trust us. Being located just down the hall from the researchers, we can easily have face-to-face meetings to review data, answer questions, and help with interpretation. They can walk right into my lab and see how things are going with their project. We aren't just a "black box" on the other end spitting out data. Working together one on one, we can provide a level of follow-up support that you can't get from a commercial lab.

NN: I understand that you direct research staff and manage all aspects of the lab work conducted in your two laboratories, is that correct? What do some of your other lab members do?

JF: We have quite a variety of projects going on in our group that are being conducted by several researchers that I'm sure readers will recognize as colleagues. In **Frank Sacks'** lab, there are currently two doctoral students working on HDL metabolism projects. **Allyson Morton** is studying the effect of apoE and apoC-III on the metabolism of HDLs as well as the effect that dietary macronutrient composition has on the metabolism of these particles. **Allison Andraski** is using a novel proteomics approach to study the metabolism of HDL subspecies with apoE and apoC-III as well as the metabolism of several different "accessory" proteins found in conjunction with apoA-I on HDL. **Sue Wong-Lee**, who has been with the lab almost as long as I have, is our resident GC-

MS expert who is responsible for much of the excellent quality data used in our numerous lipoprotein kinetics studies over the years. She, **Maria Gamez**, and **Nathaniel Smith** have been working on the very challenging HDL Proteins Grant, which required the screening of 80 different protein candidates, the creation of protocols for 16 different versions of our novel sandwich ELISA, and finally the high-throughput analysis of 2140 samples from the MESA, NHS, and HPFS cohorts. **Barry Guglielmo** and **Corey Aguilar** have been working on **Majken Jensen's** "Novel lipoprotein particles, brain abnormalities, and risk of dementia and stroke" grant, which looks at the role of HDL subspecies in the development of Alzheimer's Disease and dementia, a very hot topic these days. In the Nutritional Biomarker Lab, we've had a number of great RA's come and go over the years, our numbers ebbing and flowing with work level demands ranging from a high of 4 RAs down to a low of 1. Currently, **Matt Lopes** is running the whole ship, with extensive experience performing all of the assays that we offer. We will be increasing in size soon as we start another large-scale fatty acid project.

NN: On top of all of your other achievements, I understand you are also an inventor with two patents, including one in collaboration with Drs. Majken Jensen and Eric Rimm. That is pretty amazing!

JF: Yes, our discovery of HDL with apoC-III as a risk factor for CHD rather than being protective against it and the novel ELISA that we developed to measure that and other subspecies were submitted for patent protection by our Office of Technology Development. It was quite a process and we were thrilled when first one and then the other was granted by the US Patent and Trademark Office. We've been in talks with several interested diagnostics companies about the potential of making this assay available to the general public for improved risk prediction.

NN: What kind of research directions do you envision yourself taking in the future?

JF: Given the winding and unexpected paths I've taken up to now, it seems foolish to even venture a guess as to where I'll be 10 years from now. I definitely enjoy directing the Nutritional Biomarker Lab and hope that we can work on expanding our menu of assays to suit the needs of our department. I'm also very much interested the field of HDL research where so little has yet to be understood and can see myself working for many years to come to answer the vast array of questions that lie ahead. I currently teach a Master's level Research Methods course at Simmons College which I very much enjoy, so I could definitely see myself continuing along that path, as well. I guess I'll take it one hurdle at a time and see where it all leads me.

NN: With all of your responsibilities as Senior Research Scientist, you seem to be pretty busy! What do you like to do in your spare time to relax?

JF: I like to joke that my hobby is commuting because I voluntarily live 45 miles south of HSPH. But when I do finally get home, I enjoy outdoor activities like running, biking, and kayaking for their mind-clearing qualities as much as the burned calories. But my all-time favorite activity is boating on Narragansett Bay. We have a small but capable Bayliner in which I never get tired of exploring the tributaries and bayside towns that dot the shoreline. I love to take friends and family out for a cruise, stopping in for lunch at one of the many waterfront restaurants along the way. Cutting across the wide-open bay on a hot sunny day with the breeze cooling the air is a sure fire way to melt the stress of the work week and rejuvenate you for the challenges of the week to come. To quote the old Jimmy Buffett song, "there's somethin' 'bout a boat".



Photos courtesy of Hilary Farmer and Jeremy Furtado

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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 September:

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|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| September 4 | Labor Day— no Monday Nutrition Seminar |
| September 11 | Dr. Zirui Song (HMS), Assistant Professor of Health Care Policy. Title TBD. |
| September 18 | Dr. Marji McCullough , Strategic Director, Nutritional Epidemiology, American Cancer Society. Title TBD. |
| September 25 | Dr. Christopher Golden (HSPH), Research Scientist /Exposure, Epidemiology & Risk Program. <i>"Planetary Health and Complex Food Systems in the Context of Global Ecosystem Transformation"</i> |

FOLATE DEFICIENCY IN WOMEN CAN BE REDUCED THROUGH FOOD FORTIFICATION PROGRAMS

A recent study led by **Ramadhani Noor**, Research Associate, has found that a food fortification program in Tanzania helped to significantly reduce folate deficiency among women of childbearing age. Data over the course of a year from 600 women of reproductive age (18-49 years) was analyzed. This data was concurrent with Tanzania's initiation of a program that fortified wheat flour with folic acid. Folic acid is an important micronutrient thought to help reduce the risk of neural tube defects and mortality in children. Data from blood folate levels, dietary intake, and fortified foods consumption collected from the beginning of the study was compared with data collected 6 and 12 months later. Noor et al. found that the levels of women's blood folate had improved significantly over the course of the year. The authors concluded from their findings that scaling up food fortification programs in Tanzania and elsewhere would reduce levels of folate deficiency.

Ramadhani A. Noor, Ajibola I. Abioye, Nzovu Ulenga, Salum Msham, George Kaishozi, Nilupa S Gunaratna, Ramadhani Mwiru, Erin Smith, Christina Nyhus Dhillon, **Donna Spiegelman**, **Wafaie Fawzi**. Large scale wheat flour folic acid fortification program increases plasma folate levels among women of reproductive age in urban Tanzania. PLOS ONE | <https://doi.org/10.1371/journal.pone.0182099> August 10, 2017 2 /

See also: <https://www.hsph.harvard.edu/news/hsph-in-the-news/food-fortification-tanzania-folate-deficiency-women/>

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RECIPE CORNER

(Contributed by Simon Cheng)

Jalepeno Lime Mint Green Tea Spritzer



Recipe

- 1 large Jalapeno
- 4 cups Japanese green tea (ideally loose leaf Sencha)
- Fresh mint leaves
- 2 tbs honey
- 3/8 cup lime juice
- 1 qt cup sparkling water

Add ice, stir to mix and drink up! (Serves 4)

Simon Cheng is the Founder & CEO of Pique - Tea Crystals, the world's first Premium Instant Tea made purely from organic teas and plants with no added sugar, preservatives or artificial flavoring. Simon is a passionate advocate and practitioner of Far Eastern health systems including Qigong meditation and plant based medicine. He is a member of Harvard School of Public Health Nutrition Round Table.

Copyright © Pique Tea

The Department of Nutrition is currently seeking candidates for the position of Assistant or Associate Professor in Public Health Nutrition. Please feel free to share this with your colleagues!

For more information: <http://academicpositions.harvard.edu/postings/7477>

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The Department of Nutrition has posted a call for applications for an Assistant/Associate Professor of Nutrition and Planetary Health. The job posting can be accessed via the link below. Please share this with your colleagues!

<http://academicpositions.harvard.edu/postings/7660>

NUTRITION DEPARTMENT'S STELLAR RESEARCH FINALLY BECOMES ECLIPSED!



Stef Dean, Brett Otis, and Ahmed Alhassani take a moment off from their busy schedules to view a rare solar eclipse

Photo courtesy of Nancy Oliveira

NUTRITIION SOURCE UPDATES

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/>)

Get Cooking!

Finding time to cook a healthy and delicious meal during the week can be a challenge. Check out three quick video recipes for simple, tasty, and nutritious meals.

- Farro with Roasted Confetti Vegetables: hsph.me/farro
- Spicy Chicken Kebabs: hsph.me/kebabs
- Creamy White Bean Caesar Salad: hsph.me/caesar

Most “Box Tops” food products do not meet school nutrition standards

An analysis of products included in a popular school-based marketing program finds that less than one third of participating foods and beverages meet federal Smart Snacks in School standards:

<https://www.hsph.harvard.edu/nutritionsource/2017/08/29/box-tops-foods-smart-snacks-standards/>

Exploring the Microbiome

The body is home to trillions of microorganisms known as the microbiome. Learn more about the role of diet, probiotics, and future research aims on this topic: <https://www.hsph.harvard.edu/nutritionsource/microbiome/>

Spotlight on Yogurt

Did you know that references to yogurt and health date back to 6000 BCE? Learn about the history and current research surrounding this fermented food: <https://www.hsph.harvard.edu/nutritionsource/yogurt/>

Latest Translation Released

Danish joins the list of over 25 language translations of the Healthy Eating Plate:

<https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/translations/danish>

SAVE THE DATE ANNOUNCEMENTS!

On November 1, 2017, the Nutrition Department at the Harvard T.H. Chan School of Public Health will be celebrating its **75th year!** At the same time we will also be having our **13th Annual Stare-Hegsted Lecture.** Dr Lawrence J Appel, of The Johns Hopkins University, will be this year's speaker. The two events will be combined that afternoon. The Department will be celebrating its 75 years with a symposium starting at 1:00 pm and the Stare-Hegsted Lecture will be at 4:30 pm, with a reception afterwards. Both events will take place at the NRB in the Rotunda Room. More details will follow later.

September Postdoc Meeting Announcement

As part of our department's Post-Doc Meeting Series, job talks will be discussed at the September meeting. Although some resources will be shared at the meeting, it is felt that sharing personal experiences would be most beneficial. **Stef Dean**, Academic Coordinator, is looking for volunteers to share their advice and experience with job talks at the September Post-Doc meeting. The meeting will be held on Thursday, September 14th from 11:30 am – 1:00 pm in Building 1, Room 1208. The volunteers can attend for part of the meeting if their schedules do not allow for being present the entire meeting. If you would like to participate, please let Stef know.

*To subscribe to **NutriNews**, please contact Hilary Farmer, Editor: hfarmer@hsph.harvard.edu.*

Email hfarmer@hsph.harvard.edu with any comments, corrections, or suggestions for future issues of **NutriNews**.