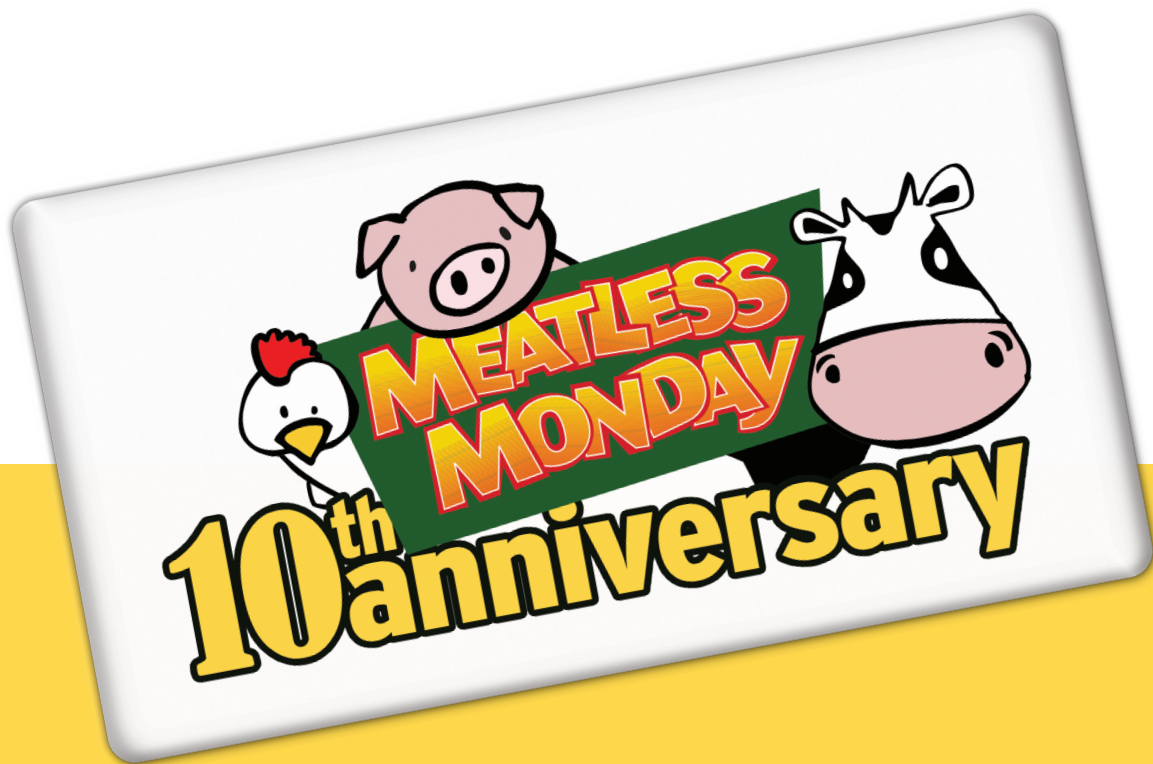


Meatless Monday & the Johns Hopkins Bloomberg School of Public Health

10TH ANNIVERSARY SCIENTIFIC SYMPOSIUM

Event Proceedings



JOHNS HOPKINS
CENTER *for* A LIVABLE FUTURE

Thursday, October 17, 2013 | Johns Hopkins Bloomberg School of Public Health | Baltimore, MD 21205



Meatless Monday & the Johns Hopkins Bloomberg School of Public Health 10TH ANNIVERSARY SCIENTIFIC SYMPOSIUM

Thursday, October 17, 2013

4:00pm – 5:45pm

Johns Hopkins Bloomberg School of Public Health

Baltimore, Maryland

Preface:

The Meatless Monday Campaign launched in 2003 in association with the Johns Hopkins Bloomberg School of Public Health. Since then, the campaign has grown into a global movement with programs in 26 countries and the participation of thousands of restaurants, schools, worksites, communities and celebrities.

The Symposium event marked the 10-year anniversary of the Meatless Monday campaign and a decade of collaboration with the Johns Hopkins Center for a Livable Future as scientific advisor. Many Johns Hopkins faculty members joined in panel discussions with marketing experts from The Monday Campaigns to discuss and share the stories, scientific evidence, and behavior change principles behind the success of Meatless Monday. Over 100 people attended the event and in addition, over 100 people tuned in to the live web streaming of the event online.

The following report documents this milestone event. The video recording, photos and all event materials, including this proceedings report, can be accessed at www.jhsph.edu/clf/mm_10anniv.html.



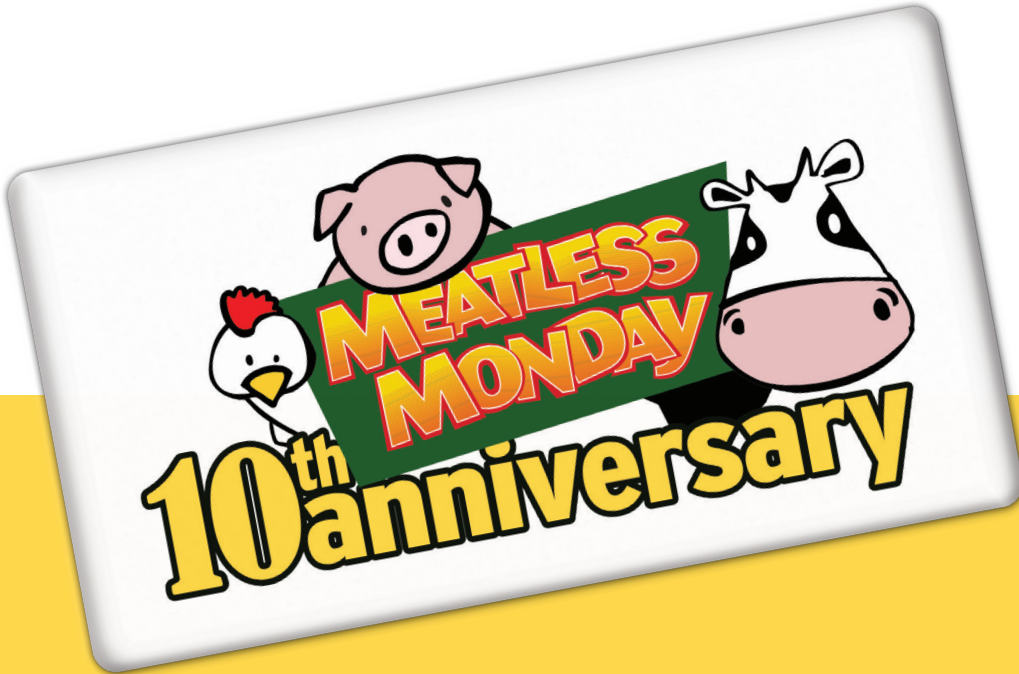


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In the Beginning... Meatless Monday: In the Beginning...

Welcome by Al Sommer

Al Sommer: Thank you everybody for coming. This is just a wonderful event. I have to tell you that 10-11 years ago had anybody predicted that we would be here celebrating an extraordinarily effective program, or a program at all, that attempted to do what this program has done, I would have said, “I don’t know what you’re smoking.” Because this is not what happens in public health, in general. We make research discoveries, we publish them, we even tell people about them, and they sort of sit there on the shelf. So to actually make a difference by changing people’s behavior through education and marketing and advocacy is quite extraordinary. Particularly, as somebody once pointed out to me, “The role of public health is to get people to stop doing all the things that they like to do.” So that is always the great opportunity and the great challenge.

I’m Al Sommer. As the present Dean, Mike Klag, likes to say, I’m Number 9, he’s Number 10 in the Deanship line, and he’s very sorry he couldn’t be here today. But he’s in Germany today, where he’s giving a keynote address, and therefore, sorry to have missed it, so he has asked me if I could please officiate on this important occasion. So that I will, and to begin the festivities, I think we have a video to show.

<http://www.meatlessmonday.com/10years/>

Al Sommer: All right! What’d you think of that? Now, there aren’t too many major movements in the world where the founding person is here, and a couple of culprits in crime can talk about how they remembered the start of this event. So that’s what we’re going to do next.



“Meatless Monday: In the Beginning...”

- Moderated by **Robert S. Lawrence, MD**, Director, Johns Hopkins Center for a Livable Future, Johns Hopkins Bloomberg School of Public Health
- **Sid Lerner**, Founder and Chairman, The Monday Campaigns
- **Alfred Sommer, MD, MHS**, Dean Emeritus, Johns Hopkins Bloomberg School of Public Health

Bob Lawrence: My name is Bob Lawrence. I’m Director of the Center for a Livable Future. And we’re now going to have little bit of a “Rashomon” experience. Those of you who remember that 1950 Kurosawa film where three people sitting at the gate under protection from a deluge recall a crime scene that they witnessed.





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Well, thank you, Al, for the welcome, and let me add my welcome to everybody. It's great to have you all here. And Sid, let me just kick it off by my recollection of the fact that you were a member of the Advisory Board to the Spira/GRACE project on industrial food animal production, the first major project of the Center for a Livable Future, and we were examining the harmful effects on human health, and on the environment of the increasing concentration and industrialization of agriculture. Antibiotic resistant bacteria, contamination of soil, air and water from concentration of animal waste, and the high meat, high saturated fat diet that was unsustainable and unhealthy. And Sid, you were the one who said at one of the meetings, "Well, you're doing a good job on the supply side issues, but what about the demand side? Why don't you begin messaging about getting people to eat a healthier diet?" And then you told us about World War I and World War II.

Sid Lerner: I wasn't there for the first one.

Bob Lawrence: But we were both around for World War II

Sid Lerner: That's right. Well, what a privilege to be in that group and in this institution, and at that time, ten years ago, it's hard to believe that diabetes and obesity were not the headline grabbers. That was a little ahead of the time. The big words then were saturated fat and cholesterol. And not only was I interested in the environmental and other aspects of it Bob just announced, but also I'd just gotten put on Lipitor because I'd been eating a little more meat than I should have as well. So I had a little sensitivity to having too much meat in the diet, and I asked Dr. Bob how much is too much? And Bob said-- quoting USDA and FDA, and the powers that be-- 15 percent. Thank God it was 15 percent. If it was 18 percent or 23 percent, we wouldn't be here, because 15 percent worked out to three meals out of 21, and that's one day. And if we just knocked off meat one day, it's a way of dealing with it. You can't take 15 percent off of every plate or every sandwich. So we thought that was an interesting idea. One day a week, people could handle that. It's doable and understandable.

What should we call it? I dug back to my Boy Scout days of World War II, and Roosevelt had just launched Meatless Monday, which he picked up from World War I, when Herbert Hoover suggested it for conservation. They had Meatless Monday, Wheatless Wednesday. And that sort of helped out conservation in World War I, so we said, "That's a good name. You got the double M's, a pneumatic device." And not realizing what a monster value Monday was besides being an M-word. So we called it Meatless Monday, and although there had been some discussions, if you remember, "Do we have to say that? Take meat that way from people? Can we call it Healthy Monday?"

And I said, "That's fine, but it's a little too benign-- doesn't have the edge that's going to get your attention, whether you like it or not." So, we wrestled with that for a while, but Meatless Monday did stick. And that's my recollection. But then I can't remember what I had for lunch yesterday





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together. And second, what do you do instead? Every week's issue, every Monday, we would come out, using a periodicity of the internet-- of people checking in Monday-- with the latest updates on health and cholesterol and mainly the recipes of things you could do that didn't require meat.

So that's what really got us started. And it was something that did have some pushback with people. "Oh, you take away my meat?" And all that, "I gotta have meat," and this business. Well we associated it with Johns Hopkins and started building up papers—Jilian Fry and Roni Neff's literature review on Monday as a phenomenon behavior, a whitepaper that came out of the Mailman School of Public Health at Columbia-- and started putting together patchworks of real life validation for the idea, which we felt intuitively made sense. You know, whatever disaster or catastrophe happens in the world, they say, "Well, let's see how the markets open on Monday." Monday is sort of a global day of the beginning of a week. And it was a good time to get this into the lifestyle and behavior of people, not just the annual event, or like "No Lamb Chops November," or "No Pig's Feet August." We got on the calendar of the week. That's where life begins. And let's get validated in more ways. More people go on diets, exercise programs, stop smoking on Mondays in real life. And we said, "Gee, let's grab a hold of it, and blow it back out to what people really do." And so we thought this was a marvelous behavior hook. And we spent the next ten years trying to add to the evidence base, which I think you're still doing.

Al Sommer: Well, I also remember, you very cleverly early-on saying, "Well, we got to get as many people into this fight as possible. How do we get all the Schools of Public Health, or at least more than the Bloomberg School involved?" And being a Dean at the time, I said, "Well, money talks. I mean, you want to get schools involved? Some money." And actually, my assistant, Rebecca Pickard-- how she found this, I have no idea, because she wasn't my assistant then-- but here is the original letter of November 7, 2002. This was before the campaign actually got formally started, where I got yours and my good friend, Alan Rosenfield, to cosign a letter that we could hand out-- I was then President of the Association of the Schools of Public Health, so I could do this-- that we handed these letters out to every Dean of School of Public Health at our annual meeting. And it says, "Dear Colleagues: Excess consumption of saturated fats is a major public health problem. We have been discussing these issues with friends in New York City--," we didn't want to nail anybody, "-- who are planning a national campaign to highlight the need for Americans to further reduce the amount of animal products in their diet. The Meatless Monday campaign, we use a simple concept of going without meat one day a week. Healthy alternatives will be promoted. The Johns Hopkins Bloomberg School of Public Health and the Columbia University Mailman of Public Health are working with the campaign by providing scientific advice and assisting in formulating the communication strategy." Now here was the important point, "To encourage the development of new ideas, and new evidence, and new thoughts, and new slogans, and the health benefits of reduced consumption of animal products, and to involve the broad public health academic community, the Meatless Monday Campaign will award 20--," that was enough for one for every School of Public Health, because there were 20 Schools of



Public Health then, “-- 20 \$5,000 Competitive Pilot Grants to students interesting in working on communication strategies. These Meatless Monday Health Scholars will be chosen from among students at the Schools of Public Health. We invite you to consider joining us as sponsors of this effort.” Remember that?

Sid Lerner: This is brilliant. This is really what put legs, arms and every other organ you need to get this thing moving, because it got the buy-in of the Public Health Schools of the United States, so it wasn't just one runaway dean with an idea. But it got the very--

Bob Lawrence: One runaway admin who managed to cajole one dean.

Sid Lerner: And the sainted wonderful part of Alan Rosenfield at Columbia Mailman School of Public Health who really took a great liking to it and never regretted the day he was number two after Hopkins to be involved with it. But thank goodness he did get involved, because in our first brochure we said, “Public Health Campaign in association with Johns Hopkins Bloomberg School of Public Health and 20 other Public Health Schools, including Columbia Mailman School of Public Health, New York.” The other 20 said, “Yeah, do, but don't mention my name. We're land grant schools, and they're going to kill us if we're--,” so while they did buy into the idea, we could only use the Hopkins name in front, and the Columbia name on the backend.

Bob Lawrence: Our portion of the program is rapidly winding up, but I wanted to add two other quick things. In terms of evidence base, you remember that in 2000, the then Surgeon General, David Satcher, released the Healthy People 2010 Report, as the Surgeon General does every decade. “What are the goals for the nation to improve the health of the American people?” And he was the one who said, “Fifteen percent reduction saturated fat.” And we have nutritionists in the room, we have public health professionals in the room, we have behavioral scientists in the room. And I guarantee that not one of us would be able to, 21 times a week, tease apart, first of all, what part of what's on our plate has saturated fat in it. And secondly, what would 15 percent of that part be? So your idea of capturing it in one single day was absolutely brilliant. We're now going to hear about some of the science base for lowering animal fat and meat intake. And then we're going to come back for some more stories about Sid's early vision. But I do want to pick up on the other comment Al made in his introduction about public health is getting people to do all the things that they shouldn't be doing. And that's Mark Twain, who said, “First, you take away my smokables; then you take away my drinkables; then you take away my comestibles; and all you got left is health!” So Sid, the Healthy Mondays campaigns are now taking away our smokables, and our drinkables, and we started with taking away our comestibles with Meatless Monday, and we're all healthier for it. So thank you very much for your leadership.

Sid Lerner: Sorry about that!



In the Beginning...

Meatless Monday:



Why Meatless?

The Public Health Impacts of a High Meat Diet

“Why Meatless? The Public Health Impacts of a High Meat Diet,”

- moderated by **Robert S. Lawrence, MD**
- **Lawrence Appel, MD, MPH**, Director, Welch Center for Prevention, Epidemiology, and Clinical Research; Professor of Medicine, The Johns Hopkins School of Medicine and Bloomberg School of Public Health

Bob Lawrence: We’re now going to talk to the science base of reducing meat in the diet. And I’m going to introduce first Larry Appel. Larry is Professor of Medicine at the School of Medicine and Professor of Epidemiology at the Bloomberg School of Public Health, and Director of the Welch Center for Clinical Prevention and Epidemiology. The Welch Center is a collaborative research unit between the two schools that has done pioneering work in a broad range of important public health issues. Larry’s also the father of the D.A.S.H Diet, which demonstrated that you could lower blood pressure, reduce cardiovascular risk by adopting what is essentially a Mediterranean-like diet with a much reduced meat intake. Larry, would you please come up and share your wisdom with us? Thanks for being here.

Larry Appel: Great, well, thank you very much for the opportunity to present here. So in five minutes I have to tell you all I know about the evidence base supporting reduced meat consumption. So in addition to serving as Director of the Welch Center, I also served on a Dietary Guidelines committee in 2005, and again in 2010. So I’m familiar with many of the debates and discussion about role of saturated fat, meats, and other types of foods that we’re recommending and not recommending. So I thought I’d highlight, actually, something I pushed on the Dietary Guidelines 2010, which was patterns, not just individual nutrients. And we identified three patterns that had health benefits, as opposed to individual nutrients, individual foods. And we said, DASH-Style Dietary Pattern, which is actually patterns, plural; Mediterranean-style Dietary Patterns; and Vegetarian Patterns. And as for the evidence on Vegetarian diets, we documented that there are five clinical trials with blood pressure as an outcome. Blood pressure is a well-accepted surrogate outcome for cardiovascular disease. And then five cohort studies. And these are some of the excerpts [slide 4]. I can’t really go over the evidence, but the excerpts about these healthy dietary patterns. That these are associated with lower blood pressure and a reduced risk of cardiovascular and total mortality. And a common feature is an emphasis on plant-based foods.



So now I’m just going to go over each of those three patterns very briefly. The first is Dietary Approaches to Stop Hypertension. This is an actual picture of the food that we served in this feeding study [slide 5]. It was a randomized controlled trial, and it was a feeding study. And so this is breakfast, lunch and dinner. I often point out the plate on the upper left, and say, “I don’t know what meat that is. That’s mystery meat that was probably served to me like in middle school.” But anyways, these are the characteristics of the three diets that we tested [slide 6]. In red is a control diet that was relatively low in fruits and vegetables. And in green





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the DASH diet. And then an intermediate diet, we call Fruits and Vegetables.” So I’ll just call your attention to the third set of bars, the Meat, Fish and Poultry. And the DASH Diet is about 25 to 30 percent reduced in Meat, Fish and Poultry compared to the other two diets. And these are the main results from the DASH clinical trial as published in the New England Journal. The DASH-Style Diet reduced blood pressure in the general population by about five millimeters of mercury systolic, which is really substantial [slide 7]. And in people who were hypertensive, it was about 11 millimeters of mercury systolic, which is basically the equivalent of drug therapy, and other studies have documented this. So this was really a game-changer when it came to blood pressure management. Because people had thought about salt, or about weight loss, but a whole dietary pattern that could reduce blood pressure, well, that’s important.

So Mediterranean Diet, it’s a very popular concept now, especially with the PREDIMED Study having been published. But there are many cohort studies. And they’re all very consistent. They show reductions in coronary heart disease. And this is a study that was done in Europe, I believe, in Greece, in people who didn’t have heart disease, as Primary Prevention [slide 8]. And it showed about a 33 percent reduced risk of CHD. And one of the attributes of the Mediterranean Diet-- and there actually is no one Mediterranean Diet, it’s just multiple patterns—is that they are reduced in meats. There is some fish, but not a lot of fish, actually. It’s just modest amounts of fish. And there appears to be a reduced risk of total mortality, CHD and cancer. And there was even a clinical trial that, as I said, the PREDIMED, that documented reduced risk of cardiovascular disease. And the same thing is true in patients who actually have existing coronary heart disease, or we call Secondary Prevention, which is again, a reduction in total coronary heart disease, mortality [slide 9].

Vegetarian diets. I thought what I would show is actually some recent evidence from a study that was published by the Seventh Day Adventists [slide 10]. And this is a study that actually had large numbers of US citizens. And there were significant reductions in total mortality and mortality from other causes. But all of the others were pointing in the same direction [slide 11]. And this is data for what they call the Semi-Vegetarians, which were people who reduced, but not completely vegetarian. You see trends in the same direction, even if they weren’t statistically significant.

So how would you summarize this all? [slide 12]. Well, the way I pull it all together is reduced meat intake is one characteristic of healthy dietary patterns. There are obviously other characteristics. There is consistent evidence of potential benefit from vegetarian diets, and I didn’t show the data, but it’s more so in men than in women. And there could be several reasons, one of which is that coronary heart disease is more common in men than women, so it’s easier to detect in studies. But there are limitations to the evidence. There, of course, is residual confounding, because many of these studies are observational studies, so it could be preservatives, it could be the cooking method, or it could be other foods and nutrients. And the other thing is that there are remarkably few studies done in the US. A lot of these studies have been done in Europe, but there are some studies in the US. The DASH studies were done in the United States. So that’s my five minutes. I’m sure there are questions, and I’ll be more than interested and eager to take them in the panel. Thank you.



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Bob Lawrence: Thank you, Larry, great quick tour. We're next going to turn to Keeve Nachman. Keeve is the Director of our Food Production and Public Health Program in the Center for a Livable Future. And Keeve's going to talk about the various hazards associated with industrial food animal production.

- **Keeve Nachman, PhD, MHS,** Director of Food Production and Public Health Program, Johns Hopkins Center for a Livable Future; Assistant Scientist, Johns Hopkins Bloomberg School of Public Health

Keeve Nachman: Thank you for that introduction, Bob. And it's an honor to be part of today's celebration. I am going to take five minutes to talk about a different part of the food system continuum. Dr. Appel did a terrific job talking about diet-related disease, and I'm going to talk about some of the public health concerns associated with the way we produce animals for food. We are producing more animals now than we ever have. And over the last 50 years, we've nearly tripled our meat production capacity across all classes of animal products [slide 14]. And on an annual basis, we produce nine billion food animals domestically. We've had to change the industry quite substantially in order to support our appetite for meat in the country. And this figure [slide 15] shows changes in the hog industry over the last 60 years. And what you'll see is the number of operations producing hogs has dropped off quite a bit. Whereas, we see an inverse trend in the number of animals per operation. So we're seeing fewer farms and much, much bigger farms. And even though, I'm showing you hogs, trends are very similar in the other classes of meat, particularly poultry and cattle.

We've also shifted the location of where we produce animals. These are two use maps [slide 16]. The first is from 1949, and each dot on this map represents the processing of 50,000 or more chickens in a single year. By 2007, in order to represent the poultry industry on a map, we've had to change our metric. Each dot in that map represents the production of one million or more birds in that locale in a particular year. And what you'll see is that in 1949, the industry was fairly dispersed across the US, whereas in 2007, we've seen the industry shift pretty dramatically to the Southeastern part of the United States, which we call The Broiler Belt. In order to support this style of production, we've adopted some practices that are particularly troubling [slide 17]. There's no way within my allotted time I could cover all the practices and the different ways that food production impacts people in the environment, but I'm going to highlight a couple that have been a big part of our work here at the Center.



The first is the use of arsenic-based drugs in food animal production [slide 18]. This is something I've personally been involved with over the last ten years. There are two primary drugs that have been used of this nature in the US, and those are roxarsone and nitarsone. They've been in use for quite some time. They were first introduced in the '40s. And they're





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used for a variety of purposes. I think the reason that we believe that they're most commonly used is that they help chickens and pigs grow faster. There are two primary human concerns when it comes to use of these drugs with regard to public health, and those are exposures to residues of arsenic in meats that have come from animals that are treated with those drugs, and also the persistence of arsenic in the waste from animals that are treated with the drugs. And so we published a study just a few months ago that demonstrated that using these drugs increases the toxic form of arsenic in chicken meats [slide 19]. And inorganic arsenic is a very well-recognized human carcinogen, and there's accumulating epidemiologic evidence that shows that long-term exposures to arsenic is associated with a whole wealth of other adverse health outcomes. And we actually had a success on this front, which is quite exciting to report. We saw just a week ago, the FDA reported that it was going to withdraw the approvals for three of the four arsenic-based drugs, effectively banning those. And this is something that doesn't happen very often. You can count on one hand the number of times that FDA has actually taken action on animal drugs. So we have seen our research actually yield results, which is a terrific thing to share with you.

The second practice that is particularly troubling that I wanted to talk about today was the indiscriminate use of antibiotics in food animal production [slide 20]. In the United States, 80 percent of the antibiotics that are sold each year are sold for use in food animals and not in humans. And when these drugs are used in food animals, they're typically not used to treat veterinarian-diagnosed disease. Instead, they're used for purposes of growth promotion and prophylaxis. They're typically used at lower doses and for longer periods of time, often the entire lifespan of the animal. And they're used in the absence of any veterinarian-diagnosed disease or disease risk. The reason why we're so troubled by the use of these drugs in this context is that the nature of this use selects for bacteria that are resistant to antibiotics. And what that means that if a person were to contract an infection from these bacteria, those infections are very challenging to treat, sometimes they become untreatable, and they're very expensive to treat. So the economic costs associated with this practice are enormous. I think people most typically think in terms of food safety risks, because those are risks we can all relate to. There was a recent example during the previous-- the recent government shutdown where we saw an outbreak of Salmonella Heidelberg in Foster Farms Chicken [slide 21].

But the risk I'd like to talk about in conclusion of my discussion today, would be the risks posed by land application of animal waste, especially in the proximity of folks who live near animal production sites, or where animal waste is applied to cropland [slide 22]. So this is the thesis work of Joan Casey, she's a student of Brian Schwartz. And she did a really terrific study. What she did is she drove to all of the local health authorities in the State of Pennsylvania, and collected nutrient management plans for all of the farms producing animals in the State. And what she was able to do was map where the manure from those farms was applied to agricultural land. And she also had access to patient records from the Geisinger Health System, which gave her high-resolution, fairly-detailed medical records that allowed her to pull cases of methicillin-resistant staph-aureus. So she's able to relate the locations of those infections to the location of manure deposition. And she found some pretty interesting things [slide 23]. So Joan saw associations between residential proximity to animal production sites, particularly swine production sites, and also proximity to cropland where swine waste is routinely applied, and so she was able to draw conclusions that living





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near a swine production site, or living near cropland where swine waste is applied, increases one's risk for methicillin-resistant staph-aureus, and also skin and soft tissue infections [slide 24]. So she was able to draw some really important conclusions that are useful in making policies that might limit people's exposure to animal production sites, or crop sites. And what she's able to say is that the practices that lead to the generation of bacteria that are resistant to antibiotics might be something where we'd want to intervene in order to prevent future resistant infections. And so that's all I have. Thank you very much.

Bob Lawrence: I just want to add that Joan Casey, first author of this last study Keeve talked about, did this work while she was being supported both as a Sommer Scholar, and as a CLF-Lerner Fellow. So we can all take pride in her accomplishments. The final panelist in this section of the program is Roni Neff. Roni is Director of our Food System Sustainability and Public Health program in the Center for a Livable Future. And Roni going to share some of the concerns about environmental and climate change implications of a high meat diet.

- **Roni Neff, PhD, MSc**, Director, Food System Sustainability Program and Director of Research Programs, Johns Hopkins Center for a Livable Future; Assistant Scientist, Johns Hopkins Bloomberg School of Public Health

Roni Neff: Good afternoon. So I'm pleased to participate in this panel also. And really honored to be able to speak to some of the really powerful impacts that Meatless Monday has had on the big picture environmental issues such as resource use, climate change and food security. And in order to speak about this it's important to start with the basic core inefficiency that exists in food animal production in the industrial setting, which is that we use a set of resources to produce animal feed that could have been used to produce food for humans [slide 25]. And then we take that feed, feed it to the animals, and some of it gets lost in bone and other inedible tissue, and some of it then also goes into animal waste. And some of that waste is used on the land with some potentially beneficial implications and some really negative ones, as Keeve was talking about. So basically, when it comes to the case of beef, we're basically throwing away, you know, 25 kilograms of feed to produce one kilogram of meat that people can eat.



So I'll turn from there to some of the resources that are actually used in meat production [slide 27]. And I'll start with energy. This is some work that Bob [Lawrence] and I and some others worked on recently. There are over 40 calories of energy in every calorie of beef. So we think about the limited fossil fuels that we have available to us, and this is a lot of energy. About 20 percent of the energy that's used into his country overall is going to our food system. So it's a lot of energy that's used in meat production.



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We're using soil at very unsustainable rates, and damaging it in our feed production. I'll talk a little bit about fertilizers. So nitrogen and phosphorous are two of the main components of the fertilizers that we use. Nitrogen fertilizers, about one percent of global energy overall goes into synthesizing that nitrogen that goes into nitrogen fertilizers. So it's very energy-intensive to produce them. And then only a portion of the nitrogen actually gets into the plants. So a lot of it runs off, along with the phosphorous, into our water bodies leading to dead zones, and water contamination for humans. And a lot of it goes into the atmosphere, where it ends up producing one of the more powerful greenhouse gases that we have. So phosphorous is something that we don't hear a lot about. You can't really produce plants without phosphorous, and yet we've got a real resource shortage coming up upon us. Some have called it "the gravest natural resource shortage you've never heard of." And we may, by some estimates, within 30 years, we may reach the peak of phosphorous production worldwide.

Manure, you heard some about, so I won't talk about that. Water. So it takes about 15,000 kilograms of water to produce one kilogram of beef. So it's a huge impact. And how does that play out? Well, one of the ways it plays out in the United States is in terms of our aquifers. So the Ogallala Aquifer overlies the Midwest Grain Basket. And about most of the people that live above it, depend on it for their drinking water. And the estimates are that it would be drained within, some say, 25 years. Some estimates are a little higher. So these are the kinds of impacts that we're having from our high-meat diet.

I want to turn to climate change [slide 28]. The United Nations just came out with their latest estimate of greenhouse gas emissions from livestock at 14.5 percent. It's a little lower percentage-wise in the United States. That is mainly because the other greenhouse gas emissions in the United States are so high. So livestock is a tremendous contributor to our global greenhouse gas emissions. And a question, a lot of people would say, "Well, I'll eat grass-fed beef. That's probably better." And in fact, the evidence is suggesting that it's probably not better in terms of climate change. There are a lot of other benefits of grass-fed beef compared to industrially-produced meat, but not in terms of climate change.

So what are the impacts of all this. How does it play out? Well, here's an example from one project that I was a reviewer on [slide 29]. Basically, they found that if everybody in the United States took one day a week for a year, maybe that day could be Monday, and skipped meat and cheese, it would be like not driving 91 billion miles, or taking 76 million cars off the road. So the impact of a program like Meatless Monday is huge, and it's already having a significant impact.

Finally, I want to talk about food security-- global food security and in the United States [slide 30]. So the United Nations estimates that we are going to need 50 percent more food around the world by 2050. And at the same time, the United Nations is also estimating that global meat demand could rise by 73 percent over that same time period as developing nations get wealthier and there's a higher demand for meat. So how are we going to meet that demand? At the same time we're faced by depletion of fossil fuels, all the things I was just talking about-- climate change, soil and water depletion, all of these challenges—even to maintain the level of food production that we've got today. And a question is, what if we changed the



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way that we used our resources and looked to more efficient ways of using resources, so that, for example, if we were to reduce our meat consumption, we could take a bite out of that gap between what we've got and what we'll need? And so, for example, one study found that if we took the land that's used for animal feed and changed it over to grow food crops-- and that's not like feeding people feed corn, but actual food crops-- we could feed a billion people on predominantly vegetarian diets, which is more than the total number of undernourished people in the world today. Now, it's not necessarily realistic that we're going to transform the world population to predominantly vegetarian diets any time soon, but you can see that switching to a program like Meatless Monday can have a significant impact and make a real dent. In conclusion, I think that there are a lot of really powerful reasons to support Meatless Monday. This is a program that has been and will continue to make a real impact. Thank you.

Bob Lawrence: So we have about four minutes before we turn things over to the next panel. And maybe I could just start off by saying in terms of the net public health impact of diet versus environmental contamination versus climate change that's going to alter food productivity and antibiotic resistance and arsenic in our food, if you had to allocate energy within the School, within the students that we're training, and the public health community that we're a part of, what would be a good balanced approach to solving this problem? How does Meatless Monday capture that balance? Larry?

Larry Appel: I think that the School of Public Health places a lot of emphasis on what we traditionally learned, you know, about food, physical activity, smoking. I think there is less emphasis on the topics that were otherwise covered, and that's where perhaps the knowledge gap is the greatest. So I'll actually, I'll declare defeat, and say that I think there probably should be greater emphasis on some of the consequences, not necessarily the health, which I think people will absorb through many of their other classes.

Bob Lawrence: Okay, Roni?



Roni Neff: I would say that there's so many really powerful reasons to work on a program like Meatless Monday, and that different aspects of it are going to speak to different people, and so I go with the idea that going with people's own motivation is going to lead them to do the work that they are most engaged with. And so I would really spread it across the three based on the interest of the students.

Keeve Nachman: It's a great question. And when I think about the problems associated with high meat diets and the way we produce food, I think a coordinated strategy across all three domains really does make the most sense. Within the domain that I spend the most time focusing on, I think if we take away some of the crutches that prop up the system that we have on our hands today, I think we'll inherently reduce the volume of meat that's produced and thus promote a healthier approach to eating food.





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Bob Lawrence: So one thing that hasn't come up yet today is that there's a lot of ignorance about confusing protein with meat, as though meat is the only source of protein. Now we know that meat has high bioavailability of heme iron, and among the essentially amino acids, lysine is more easily absorbed from meat, and zinc and a couple of other micronutrients that are important. So among malnourished people in, let's say, low-income countries who don't have access to a full-range of plants and grains, it may be that we really would want to continue to provide some source of dietary meat or animal products. But Larry, do you find people confusing the fact that a predominantly plant and grain based diet actually has quality protein in it?

Larry Appel: Yeah, I think this is an important issue, because there is, basically, I think a perception meat is synonymous with protein. And that there are really-- at least in the United States, I think you can cover the spectrum in terms of essential amino acids with vegetable-based proteins. But I think there's a lot of ignorance. You say the term legume and people scratch their head. You know, "What is that?" So, I think education will be really important to help reverse that misconception.

Bob Lawrence: Yeah, with no disrespect, I would say, "Thank God for the Seventh Day Adventists," because they are demonstrating that you can be a vegetarian and be healthy. We're not asking everybody to be a vegetarian, but we're saying that, indeed, you can get quality protein from a diet that's predominantly plants.

Larry Appel: I think especially in the case of the United States. I don't think we need to worry about, given the variety of foods that we have available to us. I don't think we need to be worried about deficiencies from some of the essential amino acids.

Bob Lawrence: Great. Okay. Well, we've dealt with the comestibles. Now we're going to turn things over to David Holtgrave, Chair of our Department of Health, Behavior and Society to deal with the smokables, the drinkables and the unmentionables.

"Why Monday? The Idea and Research Behind Monday as a Day for Health Behavior Change"

- moderated by **David Holtgrave, PhD**, Chair, Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health

David Holtgrave: Thank you very much, Bob. And I would just like to also wish a very Happy Anniversary to Sid and Helaine Lerner and the Center for a Livable Future, the entire Healthy Monday and Meatless Monday program. It's been a tremendous decade of work. And I was privileged, about eight years ago, to get a chance to meet Sid and Helaine Lerner through the Center for a Livable Future, and found that after our initial discussions, we had a lot in common of interest in childhood obesity. And with the generosity, we were able to do an initial seminar series, bring in a lot of people to help us learn about childhood obesity and the work around the world. And this was the first report that we issued together, "Perspectives of



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Childhood Obesity Prevention: Recommendations from Public Health Research and Practice.” And ever since then, the partnership has just grown, and we’ve really appreciated being able to get a chance to partner with Sid and Helaine over time. So now it’s my pleasure to get



a chance to introduce Morgan Johnson, then Joanna Cohen, and Larry Cheskin, who are going to talk about a number of other topics that move us to the second word in Meatless Monday. We’ve talked previously about, “Why Meatless?” And now we’re going to shift our focus a bit more to, “Why Monday?” And so first to introduce Morgan Johnson, who’s the Program and Research Director of The Monday Campaigns. She works in New York at The Monday Campaigns, which is a non-profit organization dedicated to promoting the first day of the week as an ideal day for health communication. She has a MPH from the University of North Carolina at Chapel Hill. And she’s worked on a variety of public health issues at the local, state and national level, including emergency management, obesity prevention and violence prevention. Morgan, if I could turn the podium to you?

- **Morgan Johnson, MPH**, Program Development and Research Director, The Monday Campaigns

Morgan Johnson: All right, so as Dr. Holtgrave mentioned, we heard about “Why Meatless?”, and now you’re going to hear about “Why Monday?”. So Meatless Monday, I mean, it’s right in the title there. It tells you not only what to do, but also when to do it. It’s that cue to action from the health belief model, if any of you public health theorists are out there. And the great thing about it is it’s already on the calendar [slide 33]. It’s something that happens 52 times every year, and we all experience it, right? So every week, there’s an opportunity to engage in healthy behavior, and that day is Monday. And I’ll leave it to the rest of the panel as to discuss a little more about the patterns of behavior we’re seeing around Monday, but I’m just here to introduce the overall concept.



Another thing that’s great about Monday, and it being a weekly cycle, is that it fits in really neatly to editorial calendars, to restaurant planning, so it’s been a very easy thing for all of these groups, you know, outside of the health community to adopt the Monday concept, whether it’s Meatless Monday or any other our Monday health campaigns. So the Monday Mindset [slide 34]. So this is something we experience every week, as I mentioned. And there’s actually a real mindset around Monday. If you only paid attention to pop culture, you might think, “Oh, everyone hates Monday. You know, you got those Monday Blues, Monday Blahs.” In actuality, Monday is a day that we are very motivated. The psychology literature supports these

patterns of motivation, whether it’s for health or other reasons, but there’s definitely a time period at the beginning of the week where we’re really raring to go, to do something better for our lives. And we did do a survey, a national survey where we asked people how they feel about



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Monday [slide 34]. And it turns out that people actually do see it as this day for a fresh start, or to get their act together, or at the very worst, a day like any other. In terms of specific health behaviors, in that same survey, we asked people, you know, what day of the week are you most likely to do things like call your doctor, stop smoking, start a new diet, and overwhelmingly people chose Monday as that day [slide 35]. And then finally, this is the marketing aspect of Meatless Monday, or The Monday Campaigns. It's fun. It's nice to be able to look forward to Mondays. And so people have really grasped onto this concept as something fun to do that they can engage in every week. So, this is just an example of a group that dressed up in pig costumes and made this whole thing out of it [slide 36]. But we're seeing just across the board, people are really gravitating towards this concept of doing better for yourselves at least one day a week.

David Holtgrave: Terrific. Thank you so much, Morgan. And while you're getting settled in back at the panel, I wonder if I could ask you one quick follow-up question. You're a public health professional who works in an office full of marketing and advertising professionals. I wonder what marketing and advertising, or "the other side", we might say, have to offer public health and how do you get the two disciplines working together?

Morgan Johnson: Sure, well, I mean, it's been a really interesting experience. I've been at The Monday Campaigns for about two years now. And my formal education in advertising has all come from watching "Mad Men." So it's very interesting, but one thing I think that I learned as a public health person that marketers have known for years and years is if we just look for these timely patterns in behavior we can leverage them to sell people stuff. And in our case, it's health. We want to sell them health, but you know, like Prince Spaghetti made Wednesday Prince Spaghetti night. And they were able to boost sales just by having that trigger for people to go to the store. So you know, marketing has this wealth of knowledge around how to sell people stuff that I think public health can learn from.

David Holtgrave: Great, thank you so much, Morgan, appreciate it. So now it's my pleasure to introduce our second speaker, Dr. Joanna Cohen. Joanna's going to talk about her work in smoking cessation as it relates to Healthy Monday. Joanna is the Bloomberg Associate Professor of Disease Prevention, and she's also the Director of our Institute for Global Tobacco Control here in the Bloomberg School of Public Health. She's been doing tobacco control research for 20 years, and serves as one of three scientific advisors to The Monday Campaigns within our Department of Health, Behavior and Society. Joanna, if I can turn it to you, please.

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- **Joanna Cohen, PhD, MHSc**, Director, Institute for Global Tobacco Control; Associate Professor, Johns Hopkins Bloomberg School of Public Health

Joanna Cohen: So I think the Monday concept applies especially well to smoking cessation. Smoking cessation is a chronic relapsing condition, and conventional wisdom tells us that it takes people, on average, around eight to ten times to quit smoking, and actually more recent estimates set that as even a higher number. So if you can get something that will accelerate



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people's time to quit smoking again once they've relapsed, that's going to overall reduce the time that it takes to a successful quit overall. And I think the Monday idea just is that perfect cue to quit, 52 times a year. So I'm going to show you just two data slides that suggest that people are actually naturally and intrinsically ready to take control over their lives, in this case quit smoking, on Monday.

The first one is a slide of calls to a tobacco cessation quit line [slide 38] It's a bit hard to see, but it's by days of the week over the Month of July in 2010. And this is for New York State. And you can see that the patterns vary quite significantly by day of the week, with a peak at the beginning of the week, and then tailoring off towards the end of the week. The second data slide I wanted to show is maybe a little more complicated, but I'll try and explain it [slide 39]. And this is looking at people's Google searches for smoking cessation. And when do people search for smoking cessation? Well, it turns out that they search much more likely on Mondays than other days. So these are data averages from 2008 to 2012, looking at Google searches in English, and the diamond shows the mean number of searches, and the other days are shown relative to Monday. So you can see again a peak in searches for smoking cessation at the beginning of the week, and then it declines throughout the rest of the remaining days of the week with a modest rebound on Sundays.

So what are we doing next around Quit & Stay Quit Monday? Well, we're really excited, because we're about to embark on a demonstration project to look at the effect of a Monday-centered smoking cessation program where people are really sort of built on the Monday concept. Use that as a day to quit, and each subsequent week if you stay quit, you celebrate that. If you've fallen off the wagon, you can just quit again the next Monday. And we're going to look at and examine the added effect of quitting on Monday. So we're really excited to see how that works out!

David Holtgrave: Joanna, thank you so much! And I wanted to ask you one follow-up question, if I could. Especially going back to the Google findings. So much of your work is international and global in nature. Do you find that the concept of using Monday in public health has appeal outside the US as well?

Joanna Cohen: So this is actually extremely fascinating. So with that Google search analysis, we did it in English, and that's what I showed you, but we also looked at other languages. We looked at French, Spanish, Mandarin, and Portuguese. And we found the exact same patterns. That there were increased Google searches at the beginning of the week, and declining searches towards the end. So this seems to be, you know, pretty much universal. Quite exciting.

David Holtgrave: Thank you so much, Joanna. And now it's a pleasure to introduce our third speaker. We've heard about smoking and a number of other health behaviors so far, and now we'll turn our attention to obesity. And it's my pleasure to introduce Dr. Larry

Cheskin. He's the Founder and Director of the Johns Hopkins Weight Management Center in the Department of Health, Behavior and Society. And his Center uses a very comprehensive team-based approach to obesity prevention and treatment. His research includes the effects of medications on body weight, how smoking relates to diet and weight, and how technology can be used to enhance the process of dietary change, especially using M-health, or E-health technologies. And he's also very interested in the efficacy of lifestyle changes, and food substitution, like mushrooms, in weight loss and management. So, Larry, I'll turn the podium over to you.

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- **Larry Cheskin, MD**, Director, Johns Hopkins Weight Management Center; Associate Professor, Johns Hopkins Bloomberg School of Public Health

Larry Cheskin: Well, thank you very much! I really appreciate being invited to speak here. If you noticed in one of those earlier slides, it's actually diet that is more frequently queried than any of the other topics. And this is a function of our obsession sometimes with dietary issues and weight control. But it is also Monday predominant. And in particular, I think it's Monday predominant because when people tend to stray from what they would otherwise like to be doing with their diets is over the weekend, which happens to be right before Monday. So Monday is indeed an appropriate time for people to make the changes. We've actually done some discussions with our obese patients in our program, and even done focus groups that I'll share with you that emphasize that, indeed, the Monday concept is a very important, valid one for making changes. Unlike smoking cessation and drug abuse and some other bad behaviors that we can do, you can't quit eating. So you need to make small steps and gradual changes, and that may be particularly conducive to these sort of periodic reminders. You don't quit eating 52 days a year, but you make changes each of the weeks of the year, or otherwise you won't sustain long-term changes. So what we had put together that relates to Monday is relevant, because it particularly uses this periodic messaging that doesn't require healthcare provider direct intervention.

Periodic messaging through text messages or emails or other computer-based informatics types of settings-- We came up with something called TRIMM, or Tailored Rapid Interactive Mobile Messaging. And we used it in an underserved population, and I'll show you a little bit about what we found [slide 40]. But first, the focus groups that we ran at the Johns Hopkins Weight Management Center emphasized that people wanted to be reminded. That very often we're not getting out there and reminding people as frequently as they need to. It's very easy to forget what you want to do when the weekend comes and you're eating out, and other people are eating, and you don't stick with the dietary changes you'd like to do. So people at the Center were very receptive to periodic messaging. And none were opposed to getting periodic messages on Monday.



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So the program that we did originally, recruiting through Baltimore area churches, was taking underserved people who would not be able to afford to come to a regular clinical treatment program, and even with the Affordable Care Act, this is not something that is well-compensated or covered by insurance. So if we can do things that are extremely low-cost, automatic, that's particularly useful. This is Michael and his mother who have different patterns, so we set it up with enough flexibility that the program responds to the schedule and the particular eating behaviors that individuals want to change [slide 44]. And they get messages that are geared to that. Here's an example [slide 45]. We also used these pull messages, which are those that ask the person a question, instead of just talking at people, to get their feedback. So, "How much weight have you lost this week?" And they would get a positive message if they've done well, and a more neutral message if they haven't done well, encouraging them to keep trying.

The overall results of this study, which was actually funded by California Foundation, the McKesson Foundation, was statistically significant difference in the amount of weight loss that these underserved patients through black churches in the Baltimore area achieved eight pounds versus 1.3 pounds weight loss [slide 46]. People tended to respond to the text messages, although we're thinking we gave too many messages. And one of the things that an emphasis on Mondays will do is enable us to give fewer messages that are geared to one day or two days a week, rather than every single day for six months, which is what we did in the original study. And each additional bit of engagement did seem to predict outcome. The more people responded to messages, the better they tended to do. Some of the comments were that it's like having a partner concerned about your eating habits. They actually personalized this, and they knew it was a computer and not their care provider interacting with them, it's close enough and it's useful for behavior change [slide 47].

So what the next step is that we are redesigning the messages to emphasize Monday, and the timing, and a little bit of the weekend preparation so that we hope that this Monday TRIMM will be a great help in enhancing what you can get through periodic messages for weight control [slide 48]. That's it.

David Holtgrave: Larry, let me ask you a follow-up question, if I could. So much of your research interest is in the area of food substitution. And in some ways, Meatless Monday is kind of a food substitution program, we're kind of moving one class of food for the other. And I wonder if you could say just a little bit more about your work in food substitution, mushrooms and other kinds of things.

Larry Cheskin: Yes, well, that's an interesting point. So we very often give people advice about their diets. And everything we tell them makes perfect sense. You know, eat more fruits and vegetables. Cut out various things. The trouble is that very often you don't know whether people cut this thing for that. And the classic example is you tell them to drink diet soda instead of regular soda. And we know in theory, you could lose 104 pounds weight just by switching from regular coke to diet coke for a year, because you save a thousand calories a day if you're a big Coke drinker. Nobody loses 104 pounds, if that's what you're wondering, and it's because you compensate for that during the year. And you compensate by eating more





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of something else. Some of this is behavioral, some of this is physiologic. Behavioral, “I’m being virtuous. I’m drinking diet Coke, therefore, let’s have dessert.” So very often in one study we want to know whether the change is actually compensated for and how to minimize the compensation. The Monday reminding is a good way to minimize the compensation if people know that the danger is that they’ll make up for the same things in calories.

David Holtgrave: All right, thank you so much, Larry.

So we have just a few minutes left for discussion, and I wanted to ask two questions of each of the panelists. And I thought I would just name both of the questions and let you each respond to those, if you would. The one question I wanted to ask was sort of about scale. In public health, we’re really thinking about population level health. Sometimes that means we serve one client at a time, and sometimes it means we serve one nation at a time. And so, in thinking about this issue of Healthy Mondays, how do we take that concept to scale? Where do we go next in terms of population level health programs? And also just your thoughts more generally about what are the next steps in each of your areas of work that you’ve been doing? Where would you like to see the next study, the next project or the next program to scale this up? Morgan, do you mind starting?

Morgan Johnson: Sure, I’ll start with question one. So asking about how do we sort of scale this up? Well, the good news is, we’re already doing this on Monday. We all, actually, whether we know it or not, are in a more healthful mindset on Monday than we are on other days of the week. So it’s really about tapping into that collective mindset. That’s what public health has to do. But the good news is, the groundwork has already been laid. So we just need to figure out how to leverage it.



Joanna Cohen: That’s great. So in terms of smoking cessation programs, I think there’s a real emphasis now on evidence-based practice, and if we’re going to get real changes at the highest levels, let’s say at national organizations like the American Cancer Society, or CDC, we really have to develop that evidence-base, and I think we’re taking that first step with the demonstration project that I mentioned. And I think, hopefully, if you get some randomized control trials done, and really show that this makes a difference, that’s what’s going to potentially allow us to take advantage of the Monday concept on a very broad scale.

Larry Cheskin: Well, in the field of weight control, in particular, there’s this interaction between public policy and public health changes, which are critical if we’re going to prevent obesity, for instance, it’s only a public health approach. What I do primarily in my work is individually-based, has public health applications. And I think sort of the periodic messaging



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may in some ways bridge the gap between classic public health interventions, changing the environment, changing walking paths. You know, versus having to deal with individual people, where you'd need a million of me to solve the problem. So this periodic messaging and using technology is a way to, in fact, do public health interventions with individuals.

David Holtgrave: Thanks very much! And I'll just also slip in a quick answer to the "what next?" question as well. In that we are very interested in following-up another area of the Healthy Monday Campaigns, which is called Man-Up Monday, that is looking at things like HIV testing, STI testing, reproductive health. And in some of our initial work so far, we've been finding that things like Google searches for words like "HIV testing" seem to happen much more on Monday than other times of the week. And we're starting to see some of the patterns that you saw earlier today in other areas, in areas of infectious diseases, and we might not have immediately thought to expand in that area, but we're starting to see some of those similar patterns. So I think in the interest of time, it's time for us to move on to our next panel.

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- **Peggy Neu**, President, The Monday Campaigns

And I want to introduce the convener of the panel, Peggy Neu. She's been a great partner that we've really enjoyed getting a chance to work with here at Hopkins. Peggy joined The Monday Campaigns as its President in 2008, after 25 years in marketing at the corporate, non-profit and government sectors. She was the Executive Vice President working at Grey Worldwide, which is one of the largest communication firms in the world. And she had clients such as Proctor & Gamble, Sprint, Aetna, and Kaiser-Permanente. And she did something, which I'm very envious of. She took a sabbatical and traveled around the world, which is a great idea! And she then turned her attention in applying these marketing best practices that she had previously worked in and had seen around the globe to the challenges of public health. Prior to joining The Monday Campaigns, she worked with the Noral Group International on a social marketing campaign for the Department of Health and Human Services. So please join me in welcoming the President of The Monday Campaigns, Peggy Neu.

Peggy Neu: I'm from the other side. The marketing side. And it really has been so thrilling to be part of this very unique partnership just in the five years I've been here and going to APHA meetings and being around people in the public health world. I don't think there are many partnerships like this that are really advertising, marketing people, and public health. And Morgan was very nice, but it is often a struggle as we try to merge those disciplines, because they're very different. I do want to point out, I have some of my colleagues here on the advertising side. Mark Driscoll is our Creative Director, and all of these amazing concepts and creative you see around the room are from him. And Cherry Dumauual is our PR and Outreach Director. She's here somewhere. And we have, back home in New York, people who are skilled in social media, public relations, creative. So really it's a whole terrific team that has put together Meatless Monday and the other Mondays.



I do want to, though, mention one aspect of observation as I've been in this world of working with public health organizations. I mean, in advertising, any project you're on, any of the things I've worked at Proctor & Gamble, with any other client, the key is "The Big Idea". That's what everyone spends all their time on. It's not the little messages, or what does the brochure look like. It's what is the big idea that is really going to get into people's consciousness? That they're going to remember? And that's what Meatless Monday is. And that's what now Monday is. Is it's a big idea that people can get under, or wrap themselves around. And I think that is just one of the key insights for anything.

So what I want to do, this is probably a little hard to look at [slide 50, or graphic below], but I wanted to talk a little bit about where we've been and where we're going, and then Sid is going to join me. But in any case, this is outside on the Wall of Wonder, which I love, which is where the reception is going to be. But it's a timeline of ten years for Meatless Monday.



And you've seen in the video and also in talking about some of the science, some of those milestones, but I just wanted to point out a couple of them. Now the line that you see against all of these milestones is actually the growth in our awareness over the last ten years. So starting at zero, ten years later, we're now at 43 percent awareness in the US. And that's without spending any money. Which is extraordinary. I mean, you know, I used to with Proctor & Gamble spends tens of thousands and millions of dollars, and we would love to get this result! So it really speaks to the power of the idea. But also the ability of these participants to carry that load of getting the message out. And that has really been one of keys to Meatless Monday's success – that we're not telling anyone to do anything that they don't want to do.



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Some of the people that are participants benefit by promoting Meatless Monday. You can see some of the milestones here, you know, Boca Burger was one of the original participants with Meatless Monday. Subsequently Morning Star Farms joined. So again, they have a benefit and they're trying to sell products that are meatless, and so they use Meatless Monday as a way to do that.

Some of the grassroots advocacy really started on college campuses, where they got a Meatless Monday going on campus, and then convinced the food service providers to follow suit. So the SODEXO in the middle, I guess in 2010, was one of the big early adopters. And again, for them, they had to serve their clients healthier foods. There was demand among the students. So just being able just once a week to promote a vegetarian option was something that was in their interest. Mario Batali, who you saw was the first big chef to come onboard, and it's really spread in restaurants. And they do it because it's successful. One chef in New York, John Frazier, says he basically books out now on Monday night, and it's become an event. People come together and come and do a Meatless Monday together. So his business goes up. So basically this idea can just be, for all of these diverse participants, a way for them to come under and to be able to accomplish their own objectives.

Just some of the other, well you can see Oprah cheering, "Meatless Monday!" which you saw [in the video]. The city of Aspen was the first city to start a Meatless Monday, subsequently Los Angeles adopted a Meatless Monday resolution. And then in school districts, which again, you saw some in the footage, Baltimore was one of the first, and then it's now spread to San Diego, Los Angeles and thousands of others. So the great thing about this, too, is we don't necessarily go to all of these people and say, "Hey, would you like to do a Meatless Monday?" They kind of hear about the idea, they do it. They do it their own way. And it's that kind of loose movement of being able to spread it on a grassroots level that has really made it take off. So those are just some of the highlights.

But now it's not just about awareness. We've done research which indicates that Meatless Monday is also changing behavior. So this is a quantitative survey that we did with FGI Research with the same awareness survey [slide 51]. And we found that 35.8 percent of those aware said that Meatless Monday had influenced their decision to cut back on meat. And 62 percent of those that were influenced said that they try to incorporate Meatless Monday into their weekly routine. And that's really the key to it. You know, by every week incorporating it into your routine as a habit, over time, that can change behaviors. And that's more broadly, I think, what we're trying to do with the whole Monday Campaigns. And we also found that respondents reported increases in a range of meatless alternatives. So 65 percent said they ate more fruits; 73 percent more vegetables; 42 percent more beans; 47 percent whole grains; and 38 percent nuts. So it's really not a question of being aware of it, but just getting people to try something different, whether they're home cooks, or they're going out to eat. They can, over time, incorporate that into their routine and find out that it's good to put vegetables in the center of the plate.

So then in the meantime, in terms of some of our goals going forward, and this is just to touch on them. This global movement has really blown our mind, I have to say. It's in 29 countries now. And a lot of the visibility, particularly in Europe was generated when Sir Paul McCartney





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started Meat-Free Monday. But we now just get calls. Turkey just joined, a grassroots group there. Iran, a physician in Iran about five months ago contacted us, because he wanted to start a Meatless Monday as part of a program to reduce saturated fat among his patients. So it's really just been incredible that this can resonate in so many different cultures, and so many different languages. So one of our key goals is to support that movement more, and maybe even get other global organizations involved, you know, who are concerned about diet and preventable chronic diseases to see if the Meatless Monday idea may resonate with them. This is -- we're always translating these guides to try to get them into countries before. But some of the statistics that I've seen that Bob [Lawrence] has shared about the meat consumption in China-- they're now double our meat consumption in total. So as we see the rest of the world adopting these meat-centric diets, you know, that incidence of chronic preventable diseases will go up. And also the environmental impact of all of that water use and grain use. So again, we're hoping to be able to work with people to see how we could support getting that going in a place like that where the trends are really heading in the wrong direction.

So, I also just want to touch on a few of our initiatives. David [Holtgrave] mentioned Man-Up Monday. If you are in Nebraska, Virginia or Syracuse, you might drive around and see this. So Man-Up Monday has really-- and thanks to Mark, his great idea of the flaming boxer shorts [slide 54]. So the idea would be to, after a weekend maybe of unprotected sex, to get tested. It's on many college campuses. And again, this is, I think, an idea that you can say, "Oh, wouldn't it be great to get people tested?" But then it's coming up with the big idea of Man-Up Monday, the flaming boxer shorts that then makes it connect with people.

Kids Cook Monday is another project we're really excited about. The idea there is to get kids and families to cook together and eat together once a week. So we're working now with the B'More Healthy Communities for Kids initiative that Joel Gittelsohn, and his terrific team are doing here in Baltimore. Basically they're working to get access to fresh fruits and vegetables in bodegas. And then we'll do the Kids Cook Monday once you've got all that healthy food and fresh fruits and vegetables, "Now what do I do with it?" And so that's the idea of behind Kids Cook Monday, and there are a lot of other programs going on as well.

Move It Monday-- so we do a combination of things. One is just to do these, what we call, nano-workouts, so we have a lot of social media encouraging people to just do little things, take little steps every week to be healthier. And again, that has sort of gone viral through social media and other means. The Monday Mile is another one. Syracuse now has permanent mile markers all around town, where hospitals and different employer groups meet on Monday to do a mile, a number of different mile loops. Actually Healthy at Hopkins was one of the first to do the Monday Mile. Cherry [Dumaul] got a Monday Mile going in Harlem, and got TV coverage, as she always can do. And that's Team Monday there. We do our Monday Mile, as well. The picture on the bottom [slide 57].

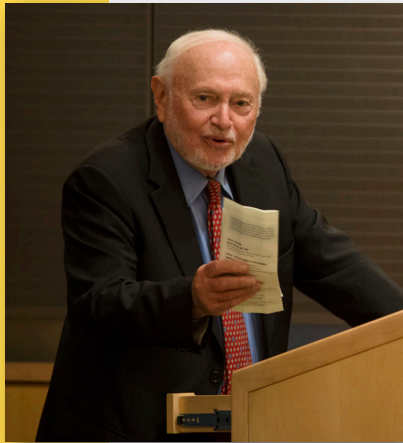
Another area we're interested in which really hasn't started yet, but you know, would love to invite partners and ideas, is Stressless Monday. That's such a huge issue, and we think the Monday periodicity can maybe help address some of those issues. And related to that is



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a program called Caregiver Monday, where we work with organizations like the Alzheimer's Association. Another wonderful person active in the movement, Sherry Snelling does Me-Time Monday. The idea there being you're a caregiver with non-stop demands, so just once a week take some time for yourself. You know, to take a break, and to take care of yourself. So that's another initiative that is getting off the ground.

Ultimately, we just have this big-- we heard about the circaseptan rhythms and healthy thinking which is on the Hopkins side, but on the Sid [Lerner] and advertising side, we really just want to make Monday the day all health breaks loose! So Sid, maybe could you join and give any other remarks or thoughts about where we're going.



■ **Sid Lerner**, Founder and Chairman, The Monday Campaigns

Sid Lerner: The idea is what's behind-- what's all this about really? It's about prevention, which only a nickel on the dollar goes to. All the money is in the treatment and the cure. And the deck is stacked against prevention, because if you do it right, nothing happens. So it's a tough thing. What we're really trying to do here is to bring the wonderful marketing forces that have brought us so fat, and smoking so much, and eating so much, and drinking so much, and use those techniques on the behalf of what's good for people. And that's what we're trying to do-- to get prevention on

people's behavior schedule. Not the annual Quit Smoking Day, or the Wear a Red Pin Day, or Pink Ribbon Walk Day, but to get into real-life behavior patterns where it's part of lifestyle. You can't legislate everything, as Mr. Bloomberg's finding out getting those 16-ounce bottles banned, or whatever. It's good to get it into something people want to do for some other human reasons that can be touched by the appropriate marketing, advertising appeals. The Monday Campaigns show it can be done.

And now we hope in the next five years to blow out the Caregiver's Monday, the Man-Up Monday, which Peggy also named and got off the ground-- with the wonderful graphics of Mark [Driscoll]. So we're trying the same-- the success that took ten years to do for Meatless Monday, get it on quicker for Caregiver's Monday, for Kids Cook Monday, for Move It Monday. Monday we hope to be a really motivating force in the prevention world, and all the people can benefit by it, would blow it out on their own megaphones. So that's what we're all about, and delighted for all the help that so many of you in this room put behind this campaign from day one, and I hope will continue to do here at Hopkins.

CLOSING



Bob Lawrence: Thanks very much, Sid and Peggy. You know, Peggy's comment about the fact that this ten-year campaign has succeeded beyond anybody's expectations with a very, very tiny marketing budget reminds me of the struggle that Larry [Appel] alluded to in terms of Dietary Guidelines for the American people. Marion Nestle reported back in 2009 that the Chain Restaurant Association, the Beverage Association, and the Candy Association collectively were spending 14 billion dollars a year to influence our behavior. The National Heart, Lung and Blood Institute, when it introduced five fruits and vegetable portions a day as part of the big campaign to control hypertension, had a total social marketing budget for that of about 200 million dollars, less than a rounding error on a rounding error of the 14 billion. So this idea that sprung from Sid's experience in marketing, and Peggy's experience in marketing, with evidence based through the scientific associations at Hopkins and at Columbia, and at Syracuse, and now at a growing number of Universities around the country, is really a remarkable tribute to the big idea, and to framing the message, and to basing it on good science, and then letting it go away with the informed public that begins to connect All Health Breaking Loose on Monday.



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Before I close the webinar part of this, and bring Al Sommer back to the podium, let me just read a letter from Mark Ritchie, Secretary of State for Minnesota. Now Mark was also a member of that Spira/GRACE industrial food animal production project advisory board, and he and Sid and other used to come to Baltimore a couple of times a year and provide wonderful advice and input. Mark, then, left the Institute for Agriculture Trade Policy in Minneapolis, which he founded, to run for Secretary of State, and he's been an outstanding public servant in Minnesota. He writes to Mike Klag, "Dear Dean Klag: I deeply regret that I cannot be with you for this special occasion, the 10th Anniversary of the Meatless Monday Campaign. When Sid Lerner began to plant the first seeds of this vision, I knew it would grow to be strong, but never imagined the incredible accomplishments that have come from all the partnerships working to achieve, in the words of your school's motto, "Protecting Health, Saving Lives, Millions at a Time." Bravo! Congratulations! Warmly, Mark."

So this has a far reach. We hope that Mark will be in the Senate one day, providing leadership there, maybe helping to get the NHLBI budget up to the point where Larry [Appel] can carry out his prospective vegetarian versus control diet studies and nail this one once and for all. But anyway, it's a real tribute to you, Sid. And to the success of your team that it's had such far-reaching consequences.

-End-