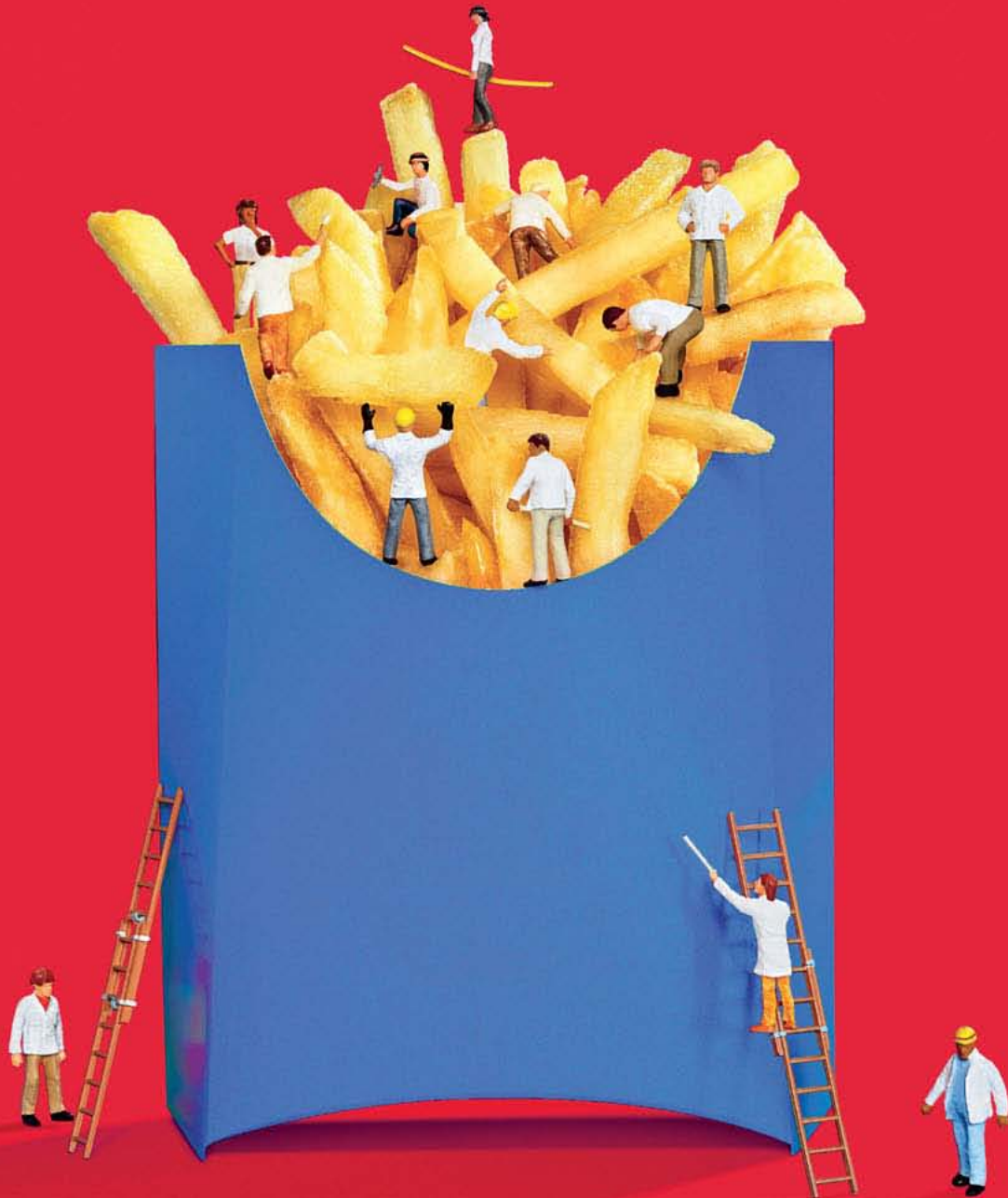


Magazine of the Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy
and the Jean Mayer USDA Human Nutrition Research Center on Aging

Winter 2018 Vol. 19 No. 1

Tufts

Nutrition



NOT SO FAST

How Tufts scientists are working to transform what your kids eat in restaurants



NOURISHED FOR THE WEEKEND

In recent years, food banks and other antihunger groups have embraced backpack programs, which send public school students home on Fridays with meals—tucked in their backpacks—to help get them through the weekend. “It’s meant to fill the gap that’s left because the National School Lunch Program and School Breakfast Program don’t support children’s food needs over the weekend,” said Lauren O’Brien, N17, coordinator for the Cambridge Weekend Backpack program in Cambridge, Massachusetts, run by Food for Free. She leads a team of volunteers who pack and deliver sandwiches, fruit, oatmeal and other foods to 523 students at 17 schools. According to Krissy Scommegna, N17, who directs the Somerville Backpack Program for nine schools in Somerville, Massachusetts, last year it took about 1,000 volunteer hours to distribute 34,970 meals to 300 students, including some 8,000 yogurts and 16,000 cheese sticks. Worrying about food puts kids into survival mode, O’Brien said, and keeps them from being able to learn. “Just that simple security of having food over the weekend,” she said, “enables a kid to be a kid in school, and grow the way a kid should grow.”

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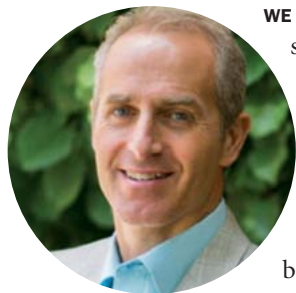
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Cover art by Dan Saelinger

Jump-Starting Entrepreneurship



WE FACE A global nutrition crisis. The food system now plays the single largest role in both health and the environment, and contributes to disparities and social injustice, threatens national security, strangles government budgets, and reduces competitiveness of U.S. businesses and the global economy.

The problems we face today will not be entirely solved by the solutions of yesterday or today. At the Friedman School, we recognize that entrepreneurial thinking and action will be crucial to generate novel solutions for the future. Following our strategic plan, we are creating a hub of nutrition entrepreneurship and innovation at Tufts, where students, faculty, scientists, companies small and large, advisers, and funders can come together to create new strategies and approaches for a healthier, sustainable, and more equitable food supply. The four pillars of our initiative are:

- A graduate-student Nutrition Entrepreneurship program, in collaboration with the Tufts Gordon Institute, including new courses, workshops, internships, mentoring, and food-focused competitions.
- Partnerships with major food-business accelerators, such as Food-X, IndieBio, and MassChallenge.
- A growing network of entrepreneurship advisers and mentors to help guide and support our students, faculty, and overall efforts.
- A planned Innovation Council linking diverse companies, established and new, that are prioritizing nutrition innovation and entrepreneurship, including in agriculture, retail, manufacturing, restaurants, supplements, health care, life insurance, and technology.

Ultimately, our vision is to inspire a new physical ecosystem of small and large pioneering companies around the Friedman School in downtown Boston—a new “Silicon Valley” for food innovation and entrepreneurship for a healthier, more equitable, and sustainable food system. We view entrepreneurship as not synonymous with business or profit, but as the bringing together of a novel idea, human capital, and other resources to create something new. This may include an innovative product, company, organization, or other effort including social and nonprofit endeavors. I invite you to join the Friedman School’s efforts for food entrepreneurship and innovation. For more information and to get involved, see nutrition.tufts.edu/entrepreneurship.

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The Wisest Investment You Can Make



YOU'VE PROBABLY HEARD that Americans aren't saving as much as they used to. At the same time, too many are skimping on perhaps the wisest investment they can make: keeping their bodies healthy through nutrition and physical activity.

I started thinking about nutrition as a personal investment strategy while reading Atul Gawande's terrific book *Being Mortal*. Dr. Gawande, a proponent of candid conversations about end-of-life care, writes that "scientific advances have turned the processes of aging and dying into medical experiences, matters to be managed by health-care professionals. And we in the medical world have proved alarmingly unprepared for it." The population is aging, he notes, yet the number of certified geriatricians has decreased 25 percent in the last 15 years.

My big takeaway from the book is that the medical and research community needs to empower people with information and help them take more responsibility for their health, especially as more people around the world reach the age of 65. The HNRCA's part in this is to continue providing new discoveries in how nutrition and physical activity can improve quality of life.

We know the HNRCA is making a difference within the research community—we've had several guest lecturers inform us about the role our ground-breaking research has played in their work, be it at an Alzheimer's Prevention Clinic in New York or the International Space Station. But with the dire state of geriatric healthcare and the tendency to treat disease rather than encourage health, I've become a greater advocate for the HNRCA to find ways to deliver our research directly to those committed to healthy aging.

Let's heed Dr. Gawande's cautionary note that "we have allowed our fates to be controlled by the imperatives of medicine, technology, and strangers" and recognize that we can make an investment in healthy aging through nutrition and physical activity.

FUNDING FOOTNOTE: In the last issue of *Tufts Nutrition* I wrote that our USDA funding was in peril. I'm happy to report we are still operating, but uncertainty remains about how we will fare when the administration releases its 2019 budget this spring. If there is a bright spot to this challenge, it is that many in the Tufts community have reached out to the decision-makers in Washington to reinforce the importance of the USDA-supported human nutrition centers. Each time I leave Capitol Hill, it is with the feeling that the value of our work transcends party lines and will earn support from Congress.

A handwritten signature in cursive script that reads "Sarah Booth".

SARAH BOOTH, Ph.D.

Interim Director, Jean Mayer USDA Human Nutrition Research Center on Aging

LAURELS

ChildObesity180 chairman **PETER DOLAN**, chairman of the Tufts Board of Trustees, and Professor **CHRISTINA ECONOMOS**, NG96, vice chair and director of ChildObesity180 and New Balance Chair in Childhood Nutrition, were honored by the Massachusetts Health Council at its annual Awards Gala.

Associate Professor **ELIZABETH JOHNSON**, a scientist in the HNRCA's Antioxidants Laboratory, was elected as a fellow of the International Carotenoid Society.

The Tufts Teaching with Technology Awards program recently honored Assistant Professor **DIANE MCKAY** for her innovative use of technology to enhance teaching and learning.

University Professor **IRWIN ROSENBERG**, a scientist in the HNRCA's Neuroscience and Aging Laboratory, was awarded the 2017 Edna and Robert Langholz International Nutrition Award at the annual meeting of the Academy of Nutrition and Dietetics. The award is the highest honor bestowed by the academy's foundation.

SHELDON ROWAN, a scientist in the HNRCA's Nutrition and Vision Research Laboratory, was awarded a Bright Focus Foundation award for his research on the importance of gut bacteria in a model of age-related macular degeneration.

CALEIGH SAWICKI, a trainee in the Nutritional Epidemiology Program at the HNRCA and a Ph.D. candidate at the Friedman School, received the Young Scientist Award at the 6th International Whole Grain Summit in Vienna.

The 2017 recipient of the Drs. Joan and Peter Cohn Research Fund is **JISUN SO**, a Ph.D. candidate at the Friedman School and a graduate research assistant in the HNRCA's Cardiovascular Nutrition Laboratory.



Paying Bonuses to Improve Nutrition

Can a strategy from the business world help solve public health problems? **BY JULIE FLAHERTY**

IN INDIA, AT least 30 percent of children are seriously undernourished. With a health crisis that enormous, getting help to the children most in need can be difficult. Professor William Masters, a food economist at the Friedman School, recently found that a low-cost business technique could spur people close to the problem to find their own solutions.

India's public day-care system, the world's largest, provides more than 30 million children with a midday meal. In a recent study, published in the *Journal of Health Economics*, Masters and a colleague tested whether giving cash bonuses to day care workers would improve the growth of the children they care for.

To begin, the researchers measured each child and gave workers a goal card for their day-care center, showing which children were clinically

underweight. Then the study assigned workers to one of two incentive plans. One group of workers received a traditional lump-sum bonus of 200 rupees (about \$3), to recognize their work and thank them in advance for additional efforts to improve the children's growth. The other was promised a 200-rupee bonus for every child who moved up the growth scale after three months. Both payments were on top of the workers' regular pay of 4,000 rupees per month (about \$67).

And that was it. Unlike a pre-planned intervention that delivers a particular supplement or type of advice, “there was no finger-wagging, ‘do this, do that’” in the study, Masters said. There was only offering the bonuses to the workers, “and then watching to see what they do.”

Both incentives worked better than a control group, which did not receive a bonus. The average number of malnourished children in each center declined by one in the lump-sum group and by two in the group that was paid per child.

Just as interesting to the researchers as those results was how the incentivized day-care workers went about improving outcomes. They didn’t feed the children more, but spent more time talking to the children’s mothers about nutrition. “It’s entirely possible they recognize what the mothers do at home is more important to the child’s growth,” Masters said.

Although the pay-for-performance plan helped more children, it was more expensive and harder to administer. It also led workers to invest more time with the children in this study who were closest to crossing a nutrition threshold. A similar thing happened in the United States when No Child Left Behind gave teachers incentives to improve achievement. “Test scores improved for kids at the margin,” Masters said, “without helping kids who were too far below the threshold.”

But the most important takeaway is that bonuses for front-line workers made a big difference, Masters said, and could potentially be used to help deliver other public health services. Incentives could encourage Head Start teachers in the United States, for example, to help prevent obesity in their young students. “People respond to incentives,” he said, “and in so doing, they discover their own ability to make a change.”

Another Breakfast Benefit

Middle-aged adults who skip breakfast are more likely to have plaque in their arteries than those who eat a filling morning meal, according to José Peñalvo, an adjunct assistant professor at the Friedman School.

In a study published in the *Journal of the American College of Cardiology*, Peñalvo and his colleagues surveyed 4,000 adults ages 40 to 54, then used ultrasound and other imaging techniques to look for signs of atherosclerosis, the usual cause of heart attacks and strokes. Those who regularly skipped breakfast had a 2.5-times greater risk of plaque than those who ate hearty first meals. The risk was 1.2-times greater in those who eat a light breakfast of less than 20 percent of their daily calories.

The breakfast skippers as a group had some unhealthy habits: Throughout the day, they consumed more red and processed meat and ate less fruit, vegetables, and fiber than the group who ate a big breakfast. But even taking those things into account,

missing breakfast was associated with plaque.

Peñalvo said eating a good breakfast may help keep blood-sugar levels stable and appetite in check, which would deter overeating later in the day.



A HEALTHIER NAVAJO NATION

MORE THAN HALF the members of the Navajo Nation, the largest federally recognized tribe in the United States, live below the poverty line. One-third lack plumbing and electricity. They also have some of the highest rates of childhood obesity and food insecurity in the country. Part of the challenge, said Emily Piltch, a USDA Agriculture and Food Research Initiative fellow who recently completed her doctoral studies at the Friedman School, is access to healthy foods. “According to the USDA, the entire nation is a food desert,” she said. “Some people have to drive 60 miles one way to get to a grocery store.”

Piltch, who grew up in New Mexico not far from the Navajo reservation, investigated that barrier to eating well by collaborating with a local nonprofit. She focused her dissertation on small, convenience-type stores—the only places to buy food in many communities—and the kinds of fruits and vegetables they sell. She oversaw the collection of fresh, frozen, and canned inventory data from the 71 stores in communities without a grocery store. Most had only a limited selection of fresh produce, and some had none at all. She also interviewed store managers and customers. “Many community members would like to have more fruit-and-vegetable options and get them in a less-expensive manner,” she said, “and store owners are willing to offer more, but actual demand is quite low. No one knows necessarily how to bridge the two.”

Piltch said stores could try buying from local farmers, pooling their purchasing power, and partnering with schools and other institutions that have food service to keep produce costs down. She shared her research findings with Navajo leadership and at national conferences. “I’m hopeful it’s some small step in the right direction,” she said.



Dennis Steindler

BRAIN HEALTH BREAKTHROUGH

TOXOPLASMA GONDII OR *T. gondii*, a brain parasite that infects about one in three people, may contribute to the development of Alzheimer’s and other brain diseases, according to a new study co-written by Dennis Steindler, director of the Neuroscience and Aging Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts. The study, the work of 32 researchers from 16 institutions, was published in September in *Scientific Reports*.

The results show that the parasite alters certain genetic pathways in neural stem cells—the very ones that are involved in Alzheimer’s, Parkinson’s, epilepsy, brain cancer, and a host of other neurodegenerative diseases. Steindler and others have long suspected that infectious diseases might target brain cells, but this study has allowed scientists to zero in on the specific mechanisms involved, paving the way for further research.

“By studying this disease and its potential connections to others, we can find trends and common pathways, and use it as a way to try to prevent and treat them all,” said Steindler, whose lab focuses on the combined use of stem cell, regenerative, and integrated medicine therapies for debilitating neurological diseases and injuries.

T. gondii can infect people who ingest materials that have been contaminated by the parasite, such as undercooked meat, drinking water, or cat litter. Most people never know they have been infected, but others may develop flulike symptoms or more severe reactions.

Steindler said some of the scientists who worked on the study are looking into formulating a vaccine for *T. gondii*, while his lab is continuing to explore other factors that lead to neurodegenerative disease. “You need a perfect storm of components to get these diseases,” Steindler said, pointing to risk factors that include pollution, radiation, and inadequate physical or mental exercise. But Steindler is particularly interested in the role of chronic tissue inflammation, and how to mitigate it through a diet high in fresh fruits, vegetables, and fish, and low in carbohydrates. “We are finding that good diet and nutrition are an extremely important component in disease prevention and delay,” Steindler said.

—MONICA JIMENEZ

A Surprising Source of Vitamin K

Vitamin K, known for helping blood to clot, is commonly thought to come from leafy greens, such as spinach, kale, and broccoli. Now researchers at the Human Nutrition Research Center on Aging at Tufts have found that dairy products also contain a surprising amount of the micronutrient.

The researchers, led by scientists Xueyan Fu and Sarah Booth, director of the center's vitamin K lab, analyzed hundreds of samples of cheese, milk, and yogurt and found they contain significant amounts of the menaquinones form of vitamin K, known as MK. Low-fat and nonfat versions had just a fraction of the MK found in the full-fat versions. Among cheeses, the soft varieties had the highest concentration, followed by blue, semisoft, and hard.

This less-studied form of vitamin K deserves attention because observational studies from Europe suggest that MK from dairy products is associated with heart-health benefits.



48 MINUTES

The amount of physical activity sedentary seniors had to add to their weekly routine to substantially cut their risk for mobility problems, according to a study led by Roger Fielding, director of the Nutrition, Exercise Physiology, and Sarcopenia Laboratory at the Human Nutrition Research Center on Aging.

Collaborating for a Cure

Studying a mysterious heart condition in cats and humans is a team effort. **BY GENEVIEVE RAJEWSKI**

A DISORDER CALLED hypertrophic cardiomyopathy, in which heart muscle becomes abnormally thick and dysfunctional, affects at least 1 in 10 cats. The disease is also a common cause of



sudden cardiac arrest in young people, including athletes who die on the playing field. Although an echocardiogram can diagnose it in humans and cats—and implantable cardiac defibrillators can help safeguard humans most at risk—there's no medication or therapy that stops or significantly slows the progression of heart failure. Tufts scientists working in both human and veterinary medicine now hope they can change that by encouraging interdisciplinary research—a strategy they outlined in the August 2017 issue of *Cardiology Research*.

In both people and cats, hypertrophic cardiomyopathy is often linked to

genetic mutations, but it is still unclear what causes the disease to vary so much in severity. Lead author Lisa Freeman, J86, V91, NG96, a veterinary nutritionist at Cummings School of Veterinary Medicine with a secondary appointment at the Friedman School, said research suggests that diet and growth patterns early in life, even in utero, may play a significant role in how the disease develops. Unraveling these nutrient-gene interactions may provide a key opportunity for improved therapeutic targets and nutritional strategies for managing hypertrophic cardiomyopathy, Freeman said. What we learn, she said, may “help not only cats, but ultimately humans.”



Spending Smarter

Teaching kids to make better snack choices with their own pocket money. **BY HELENE RAGOVIN**

NUTRITION EXPERTS SPEND a lot of time examining what children eat at home, at school and even at restaurants. But little is known about how they make choices when they're buying food for themselves—say, spending their pocket money at the convenience store. All those crumpled dollar bills add up: American kids spend more than \$200 billion of their own money a year on food, toys, and other items, with kids under 12 spending most of it on junk food, said Friedman School economist Sean Cash.

These junk-food dollars translate into hundreds of empty calories a day, said Cash, an associate professor who has researched the buying habits of schoolchildren at corner stores. Cash and his colleagues recorded children regularly purchasing an average of 480 daily calories worth of soda, chips, and candy bars—“more than a quarter of the calories they're meant to eat in a day,” he said. Cash wondered how those early experiences shape future habits as adults.

In a USDA-funded intervention project known as CHOMPS—Coupons for Healthier Options for Minors Purchasing Snacks—Cash's team looked at what happened when they offered kids-only coupons at

stores within walking distance of K-8 schools in Somerville, Massachusetts, and other nearby Boston suburbs. The coupons offered discounts on snacks lower in fat, salt, sugar, and calories than the ones kids usually picked, or on produce if it was available. “We weren't out to convince the storekeepers they needed to carry hundreds of fruits and vegetables if they weren't already doing so,” Cash said. “This was more pragmatic—sometimes getting the kids to buy baked potato chips instead of fried, or a granola bar instead of a candy bar.” Sometimes the coupons were simply left for the children to discover; other times, they were more actively promoted—even distributed by a research assistant in a monkey suit.

Did it work? “The kids did use the coupons, though not as much as we would have liked,” Cash said. And the researchers discovered that even if the kids weren't buying the promoted items, they were more likely to choose a healthier food on days the coupons were offered. “When we didn't offer the coupons, they almost never bought fruit, vegetables, nuts, or seeds,” Cash said. “When we offered the coupons, the sales of fruits and vegetables went up tenfold, from a fraction of a percent, to more than 3 percent.” That wasn't a revolutionary change, but it was an important step in the right direction. On CHOMPS days, the kids' purchases were overall lower in total fat and calories, and higher in fiber and vitamins A and C.

Advertisers spend about \$1.7 billion a year marketing food to kids, and one of their goals is hooking lifelong customers. Cash hopes a project like CHOMPS can motivate kids to think about their behavior as consumers—and teach them to make good food choices when adults aren't around. “If you sneak some cauliflower into mashed potatoes in the school cafeteria, you're not giving the power to make decisions to the children,” Cash said. “Where does that leave them when they're on their own?”

THE IRON PARADOX

The hunt for a safer supplement for developing countries and older adults. **BY ERIN LEWIS**

TREATING IRON DEFICIENCY—the most common nutritional deficiency in the world—is a double-edged sword. Iron supplements help, but in a paradox that has stymied health efforts for decades, they can also make existing infections worse. This is a great concern for developing countries, where both iron deficiency and dangerous bacteria and parasites, such as those that cause malaria, are prevalent. Now researchers at Tufts, with support from the Bill & Melinda Gates Foundation, are trying to identify safer forms of iron to use, particularly in malaria-endemic countries.

Iron deficiency affects some 40 percent of women and children worldwide. It often causes anemia, which can impede development in young children, impair immune function in adults, and increase the risk of death in pregnant women and their babies. To combat the deficiency when iron-rich foods are not available, supplements must be given in relatively high doses, because most forms of iron are not well absorbed. That unabsorbed iron can cause side effects worse than the condition it's meant to treat: upset stomach, diarrhea, inflammation, and worsening of harmful bacterial infections. These potentially life-threatening consequences have limited efforts to address iron deficiency in developing countries.

In January, Tufts researchers began a human clinical study to test new forms of iron for safety and effectiveness. The team is led by Simin Meydani—director of the Nutritional Immunology Laboratory at the Jean Mayer Human Nutrition Research Center on Aging (HNRCA)

and vice provost for research at Tufts—and Gerald Combs Jr., adjunct senior scientist at the HNRCA. It includes other researchers at the HNRCA, Tufts Medical Center, Boston Children's Hospital, Iowa State University, and the University of Cambridge. Together, they bring insights from several fields: nutrition, immunology, microbiology, gastroenterology, and molecular biology.

"This was a unique opportunity to bring all these talented and committed experts from within Tufts and our collaborating institutions together to have a holistic approach to addressing a complex problem," Meydani said.

Over the next two to three years, the researchers will test two new types of iron supplements with older adults to see whether they have fewer side effects than iron sulfate, the form commonly used in oral supplements today. Because many older adults take iron supplements but often find them irritating, this research could be particularly useful for that age group. The researchers will also examine the role iron plays in intestinal health and immune function, and how supplements work at different doses and when taken with a multivitamin.

"We believe this will be a pivotal study in allowing progress in safe iron supplementation in areas of need," Combs said.

This study is actively seeking volunteers to participate. If you are interested in learning more, are healthy, and between the ages of 55 and 80, call 1-800-738-7555 or e-mail volunteers-hnrc@tufts.edu, and request Study #2935 or the "Safe Iron Study."



Carb-Ranking Controversy

How useful is the Glycemic Index? **BY TAYLOR MCNEIL**

IF YOU COULD rank foods from best to worst and base your eating decisions on that, it would certainly make healthy eating easier. For some people, the glycemic index seems to offer just that possibility, assigning scores to foods with carbohydrates based on the effects on a person's blood sugar level.

If you are, say, diabetic, it helps to know that a standard portion of wheat berry salad is much lower on the 100-point scale—and thus has less of an effect on blood sugar—than brown rice. And for losing weight, said Susan Roberts, a professor at the Friedman School, low-glycemic-index diets tend to work better than high ones, especially for people who tend to secrete a lot of insulin.

So far, so good. But dig a little deeper into the glycemic index, and you'll find complexity—and controversy. For starters, individual foods can vary in the glycemic response they elicit. A ripe banana is different than an unripe one, and a mashed banana is different still; pasta that's al dente creates a lower glycemic response than more fully cooked pasta. The more processed foods are, too, the more likely they are higher on the scale, and studies have shown that glycemic response varies by the individual and by individual diet. And then there's the fact that a Snickers bar shows up significantly lower on the scale than green beans.

All that complexity and variability weakens the glycemic index's value, said Alice H. Lichtenstein, Gershoff Professor of Nutrition Science and Policy at the Friedman School, who has led a number of studies on

it. Too much focus on the index, she said, can detract from the fundamentals: People should be thinking about their total calories, the relative balance of fat and carbohydrate in their diets, and carbohydrate quality. There are only “a limited number of messages that we can give people in terms of guidance for choosing various food items,” Lichtenstein said, “and I think we really need to keep the focus on what's simple and what's from a general perspective most efficacious for individuals.”

Still, there is value in the index, other researchers say. “As I see it, the absolute numbers don't matter that much,” said Roberts, director of the Energy Metabolism Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging and who is currently leading two studies on low-glycemic-index diets. “What matters is how a food is relative to other foods—then the glycemic index becomes much more useful.”

Take that Snickers bar. “It has a lower GI because it's full of fat more than carbohydrates, and the sugar in it actually has a lower GI than starch,” Roberts said. “That doesn't invalidate the use of glycemic index; it just says it's not the only thing.” If Roberts had diabetes, she said, she would “absolutely be on a low-GI diet.”

Although complex, the glycemic index is “incredibly powerful” conceptually, added Dariush Mozaffarian, dean of the Friedman School and Jean Mayer Professor of Nutrition and Medicine. That's because it highlights the fact that starch “is a hidden sugar,” he said. “If you don't think about how rapidly starch and sugar in the foods



that you are eating are digested, you are going to make incorrect eating decisions.”

That makes it “absolutely crucial,” Mozaffarian said. “The dose and rapid digestion of starches and sugars in our foods—this is one of the things driving the obesity and diabetes epidemic.”

10 FOODS ON THE GLYCEMIC INDEX

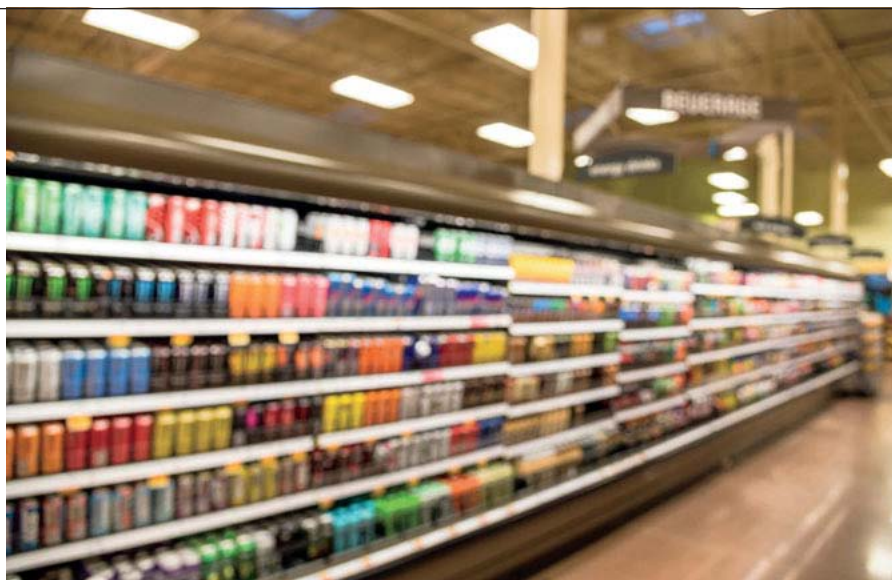
Low: less than 55

Medium: 55 to 70

High: greater than 70

Peanuts	7
Milk	31
Snickers Bar®	51
Green peas	54
Potato chips	56
Boiled basmati rice	57
Sweet potato	70
Watermelon	72
Graham crackers	74
Corn flakes	81

SOURCE: INTERNATIONAL TABLES OF GLYCEMIC INDEX
AND GLYCEMIC LOAD VALUES: 2008, DIABETES CARE



HOW TO PASS A SODA TAX THAT STICKS

The handful of cities and counties that have enacted taxes on sugar-sweetened beverages tend to follow a similar path to success, according to a paper by researchers at the Friedman School and Harvard Kennedy School.

The article, published online in *Food Policy*, compared 11 sugar-sweetened beverage-tax initiatives introduced since 2012, some successfully signed into law and some not. The initiatives that passed were situated in places with Democratic majorities and had a source of campaign funds to compete with the antitax efforts of Big Soda. They also had a message tailored to the audience: Ballot voters responded best when public health was the stated reason for the tax, while city councils liked to hear that it would generate revenue.

Of course, getting a tax passed is one thing. Keeping it passed is another. The soda-tax effort in Cook County, Illinois, a Democratic area, had a revenue promise that appealed to the county council and financial support from Michael Bloomberg, the billionaire former mayor of New York. The law passed, but was repealed just two months later, in part because people were angry that the tax seemed to be really about balancing the budget rather than public health—for example, it taxed even sugar-free sodas. “The public, with opposition campaigns supported by the beverage industry, then rose up against the tax,” said Dariush Mozaffarian, dean of the Friedman School and an author of the viewpoint.

There’s plenty of research to back up a public health message. Renata Micha, a research associate professor at the Friedman School and an author of the paper, found that sugar-sweetened beverages are a leading contributor to heart disease, stroke and diabetes deaths among Americans. “Continuing and expanding programs to reduce sugar-sweetened beverage consumption, such as soda taxes, is a vital step toward improving population health,” she said.

The authors see fertile ground for the future. With Democratic mayors leading 73 of the 100 largest cities in the country in 2016, the authors said it’s likely we’ll be seeing more soda taxes making their way to ballots.



Tufts Nutrition TOP 10

How Climate Change Will Affect Agriculture

In a matter of hours, Hurricane Maria wiped out 80 percent of the crops in Puerto Rico, a devastating blow to the island's food production. Climate change promises even more catastrophes, but also shifts in everything from temperatures to fishing grounds. Here are some of the ways climate change will create new challenges in the future, according to Timothy Griffin, director of the Friedman School's Agriculture, Food and Environment Program, and Avery Cohn, the William R. Moomaw Assistant Professor of International Environment and Resource Policy at the Fletcher School of Law and Diplomacy.

RAIN WILL BE ERRATIC

It's not so much an average increase or decrease in rainfall that worries farmers—it's the extreme events. When heavy rains fall outside the growing season and crops are not there to protect the soil, soil erosion and the leaching of nutrients into lakes, streams, and oceans are the results. These changes have already begun: In New England, the number of days where it has rained more than an inch in 24 hours has increased significantly in the last 25 years.

CROP YIELDS WILL GO DOWN

Responding to environmental pressures, yields for many crops will fall. In addition, yields are likely to be variable from one year to the next. Yields could go up in a few places where certain crops would benefit from warmer weather, but don't expect new farms to suddenly spring up in northern latitudes: Bringing new land into agriculture, building infrastructure, and creating businesses to bring products to market could take decades. Plus, clear-cutting itself contributes to climate change, accounting for 15 percent of worldwide carbon emissions.

PESTS AND WEEDS WILL INCREASE

Not only will insects that attack crops and livestock expand their territories as temperatures rise, they will hang around longer. If winters aren't cold enough to kill off pests, farmers may have to spend months, rather than weeks, battling infestations. Several weed species thrive in warmer, CO₂-rich environments,

which could force farmers to use more pesticides and herbicides. While that may be disconcerting for consumers, it's an even bigger threat to farm workers, who face significant health risks from overexposure to the chemicals.

FOOD WILL BECOME LESS NUTRITIOUS

We all know that plants need carbon dioxide to grow. But recent research has shown that some plants, when exposed to extra CO₂ in the atmosphere, grow up to have lower concentrations of protein and minerals like zinc and iron. That might not cause malnutrition in the United States, but it could have a significant impact in poorer countries where diets consist of just a few staple foods.

LIVESTOCK WILL SUFFER

In the northern United States, a warmer and wetter climate could encourage more pathogens in dairy cattle and pigs. In the South, farmers will have to pay to cool buildings that house chickens and pigs. Over time, heat stress reduces fertility and milk production, and a series of very hot days can kill animals outright—if average temperature rise just a few degrees Celsius, as some models forecast, it may be too hot to raise cows in Texas within 50 years. Farm workers will suffer, too, as recent research on heat stress points not only to lost productivity but serious health concerns for people who work outside.

FISHING GROUNDS WILL SHIFT

Fish are keenly attuned to water temperature for mating and migration cues, so expect to see big changes in traditional ranges. Scientists have already seen shifts in the Gulf of Maine, which is warming faster than just about every other ocean in the world, and is predicted to rise another 6.7 degrees Fahrenheit over the next 80 years. In other waters, higher temperatures have brought diseases and parasites in oysters, salmon, and abalone. Carbon dioxide in the atmosphere leads to acidity in the ocean, which harms coral, the ecosystem bedrock, and weakens shellfish.

THE POOR WILL BEAR THE BRUNT

We can forestall some of these negative effects by changing how and where we grow things. But the groups that are most likely to be affected by climate change are the groups that have the fewest resources to respond. Poor farmers in developing country who don't have access to mitigating technology—and the money to pay for it—will face enormous challenges. Poverty is ingrained in agriculture. According to the World Bank, nearly two-thirds of extremely poor workers aged 15 and above work in the agricultural sector.

FOOD SECURITY WILL BE THREATENED

The United Nations Development Program predicts that major losses in agricultural production will increase



malnutrition, lower incomes, and make it harder to reduce poverty. Developing countries are likely to become more dependent on imports, with their farmers losing market shares in agricultural trade. Farmers in developing regions around the world, and in sub-Saharan Africa in particular, face a sort of double jeopardy, not just from climate change, but also from conflict that may arise in response to it. Rising food prices have led to political instability, as we saw with the riots in Asia and Africa after food-price shocks in 2008.

FARMERS WILL ADAPT

Farmers and ranchers around the world are already adapting to the new weather patterns they see. They are introducing new crop varieties with resistance to heat, drought, or salinity or choosing fast-maturing varieties that adapt to shorter growing seasons. They are harvesting and conserving water and using more efficient sprinklers and drip irrigation.

DATA WILL HELP

Data is transforming agriculture, from production systems that track yield and variability to market-focused systems that communicate pricing variations to users. Almost everyone has access to a smartphone, so it's not unreasonable to envision a time when a farmer anywhere in the world can upload data from a soil sample and get an analysis back quickly. And as we gather more data, our estimates of climate risk and the social costs of climate change are getting better. Our assessments will be important for determining whether it's rational to mitigate emissions, and possibly raise ambition for taking action.



REMAKING MAIN STREETS

Working in three very different places, certificate graduates are finding smart ways to make their communities healthier.

BY JULIE FLAHERTY

ENCOURAGING PEOPLE TO TAKE FITNESS CLASSES OR JOIN A GYM IS GOOD, BUT MANY EXPERTS believe the best way to get people to exercise is to make physical activity part of the daily routine: walking to school, biking to work, strolling down to the post office. Whether a town is set up for that—with plentiful sidewalks, crosswalks, bike lanes, shade trees, and shops and businesses you can reach without getting into the car—can make a big difference. That's why the Friedman School created a course called Policy, Systems, and Environmental Change for Physical Activity, taught by Mark Fenton, a public health planning and transportation consultant, and Rebecca Boulos, NG13, executive director of the Maine Public Health Association. The course, offered through the Online Graduate Certificate Program (nutrition.tufts.edu/academics/certificates), shows students how to assess what their communities need and then advocate for smart changes to the built environment. Here are a few of the ways graduates are putting what they learned into practice.





CONNECTIONS A new paved path will make it safer and easier for people to walk across Medford. It will also link up two of the city's business districts.



GREEN SPACES Residents of all ages will be able to use the path for recreation and commuting.

MEDFORD, MASSACHUSETTS

AN INVITING WATERFRONT WALKWAY

Not long ago, Jen Valentyn noticed an odd path-to-nowhere near her son's middle school. You could theoretically follow it to a waterfront park—if you hopped a fence and maneuvered through some private property. The only other way there meant dodging cars on one of Medford's busiest roads. Thus began her campaign to create the Clippership Connector, a paved half-mile path that will provide a new way for kids to walk or bike to school, as well as connect two large waterfront recreation areas and two of the city's main business districts. Commuters will be able to bike all the way from Somerville to Boston.

Valentyn, a volunteer with a grassroots group called WalkMedford, is one of many residents working to make the city's built environment more conducive to physical activity. On some streets, they advocate for repainted crosswalks, new bicycle lanes, and curb extensions that jut into intersections, slowing traffic and making it easier for people to cross. On others, they want to see benches, updated bus shelters, and bike racks. To spiff up a highway underpass, WalkMedford applied for a grant and is picking an artist to create a mural. "There are literally hundreds of problem areas that we are trying to fix," Valentyn said.

Taking the course with Fenton and Boulos gave her practical ideas for how to approach city officials and work with reluctant neighbors to get things done. Construction is slated to begin in 2018.

WILMETTE, ILLINOIS

POP-UP BIKE PATHS AND RECLAIMED “PARKLETS”



Drivers often don't have much appreciation for cyclists and often don't even want to consider bike lanes—especially if they mean losing on-street parking spots. To get the conversation started in her hometown of Wilmette, Illinois, Anne Nagle employed a new kind of demo: the pop-up bike lane.

With a grant, Nagle bought traffic cones, stencils for painted lines, and collapsible planters that serve as a protective barrier. She then set up the temporary lane and invited people at a community day to try it out. “This bike lane is about you and me, people eight to eighty,” she explained. “It's for all of us and our children as we get older.” Many saw that the lanes were more useful than they thought.

Nagle, an emergency medicine physician, knows how poor diet and lack of exercise lead to chronic

disease. With permanent bike lanes, she could easily see many of her neighbors biking to the train station on their commute to Chicago. “People could do it as part of their daily routine, if we make it easier and safer to walk and bike,” she said. As a 2017 fellow of America Walks, a nonprofit dedicated to increasing walking and walkability, Nagle also recently submitted a plan for Wilmette that includes proposals for new sidewalks and a multiuse path. And knowing one way to get people moving is to give them rest stops, Nagle plans to introduce her town to parklets, which convert a couple of parking spaces in a retail area to a public space. Parklets, which usually have seating and umbrellas or potted trees for shade, are often located near cafes or bakeries, which can reap benefits. “You don't have to buy anything,” she said, “but it does drive business.”



REST STOPS Parklets repurpose parking spaces and turn them into urban oases for walkers and bikers.



▲ **POP-UP** To introduce residents to the idea of protected bike lanes, Anne Nagle used planters and pumpkins to set up this temporary demo at a community event.



LANES A dedicated route for bikes will help military personnel safely navigate the camp.



SHADE Shelters will keep bikes cool in the desert sun.

CAMP ARIFJAN, KUWAIT

A HEALTHIER MILITARY BASE

Lt. Col. Angela Greenewald, a 22-year veteran of the Army, has long been interested in health. Looking toward a postmilitary career in nutrition, she enrolled in Fenton and Boulos' course—which she completed while deployed in Kuwait—and realized how much the environment influences our behavior. The class gave her a chance to take a hard look at how her environment—Camp Arifjan in Kuwait—affects the health of her soldiers.

On the base, some officers have access to cars, but everyone else relies on buses, bikes, and walking—in temperatures that can soar up to 124 degrees Fahrenheit. And those options aren't great: Bus stops offer little shade, residences are a blistering two-mile walk for many, and if cyclists can get a bike from a wait list, they have to squeeze up against concrete barriers to avoid cars. All of this—plus a paucity of gyms on the base—conspires to keep 9,000 military personnel and

contractors from getting enough exercise. When she started looking into these problems, she found engaged coinvestigators in the soldiers she worked with. "By the time it was over, most of my guys were like, 'Every third street light doesn't work' and 'I noticed that the crosswalks are not painted—you can't see them,'" she said. "It was kind of a group effort with the folks I was deployed with."

Greenewald came up with a set of proposals. At the top of her list: turning one of the four lanes used by cars on the one main road into a dedicated bike lane. She would also like to see a canopy or shelters for the bikes to keep them out of the sun, and water coolers at the bus stops. She's now taken her plan to base leaders, leveraging lessons she learned in class for creating community change. "Out in the real world you have mayors and public works people," she said. "We have the same sort of thing, just on a smaller scale."

American families are eating out more than ever, but aren't always making the healthiest choices. Tufts researchers are working with restaurants and parents to change that.

EAT RE COUNTER CULT

BY JULIE FLAHERTY

ILLUSTRATION BY DAN SAELINGER

IT WAS AROUND 1 P.M. AT A FAST-FOOD RESTAURANT in Somerville, Massachusetts, and Chris DeFilippo was trying to get her two-year-old granddaughter to eat from her own plate. Aylah was more interested in the french fries they were sharing.

"No, you may not have soda," DeFilippo said. She pulled away her cup, directing her granddaughter back to a bottle of nonfat chocolate milk. Aylah soon returned to the fries. "She will be off the walls, because these are very salty fries," DeFilippo said. "Sodium does to my grandchildren what sugar does to other children."

DeFilippo takes care of her four grandchildren, ages 2, 4, 7, and 10. She makes ends meet with a pension and a grandparent benefit from the state and sometimes, for a special treat, she takes them out to eat. She does her best to steer the kids to healthier



options, though that's not easy. The seven-year-old only wants fried chicken. The four-year-old is so fussy that she will let him get a shake—"I feel it is more filling," DeFilippo said. The ten-year-old recently started ordering double-decker burgers, but DeFilippo won't always allow that. Diabetes runs in the family, she said, and "that's a lot of calories to burn up."

Like many, DeFilippo worries about what her grandchildren eat at fast-food restaurants, what they don't, and how much it all costs. "You worry about all of it," she said.

Christina Economos, NG96, professor and New Balance Chair in Childhood Nutrition at the Friedman School, is familiar with these worries. As childhood obesity researchers, she and her colleagues have interviewed thousands of parents who want their children to be healthy eaters, but the convenience, low cost, and palatability of child-pleasing foods are a big draw.

Americans are in love with eating out and doing so more than ever. In 2016, Quartz reported that Americans spent more money at bars and restaurants than they did at grocery stores for the first time in history. A lot of that goes towards fast food. On any given

day, 34 percent of children between ages two and nineteen consume it. And on days when they do, a study in the *Journal of the American Medical Association* reported in 2013, they consume an average of 126 additional calories, plus more sugar, saturated fat, and sodium. For kids from low-income families, the numbers are even higher. Meanwhile, since 1980 rates of obesity have doubled in two- to five-year-olds and quadrupled in six- to eleven-year-olds. "Put all that together," Economos said, "and it turns into a problem that needs to be urgently addressed."

But rather than demonize the restaurant industry, Tufts researchers are working with it to increase healthier options on menus. Their work, funded by the JPB Foundation, with additional support from the Robert Wood Johnson Foundation, is one of several research-into-action initiatives spearheaded by ChildObesity180, a multi-sector collaboration based at Tufts aimed at turning around the epidemic. "Our approach has always been to invite all players to the table to find solutions," said Economos, who is vice chair and director of ChildObesity180, which has reached more than 11 million children in all 50 states since its

founding in 2009.

Thanks to the team's collaborations with businesses—and long track record of success—ChildObesity180 researchers have been able to conduct groundbreaking studies right inside restaurants, gaining unprecedented access to sales data and measurements of what kids are actually eating. What they're finding is that offering healthier foods can be good not just for children—it can be good for revenue, too. Now, they're taking their work to the other side of the restaurant counter: Figuring out how to help caregivers like Chris DeFilippo make healthier decisions when they place their orders.

IN APRIL 2012, THE SILVER DINER, a chain of more than a dozen family restaurants in Virginia, Maryland, and New Jersey, decided to change its kids' menu.

In addition to adding some healthier entrees, such as teriyaki salmon, it took fries, sodas, and other sugary drinks off its list of kids' sides and extras. Parents could still order them for no extra charge, but they were no longer the default. It was a bold decision by the company, and one Economos and other Tufts researchers noticed.

Working with the Silver Diner in 2014, Tufts looked at sales data from about 350,000 children's meals before and after the changes. The results were better than anyone could have expected. On the original menu, just 3 percent of kids' entrée orders were from healthier options—after the changes, nearly 50 percent were healthier. Orders of french fries dropped from 57 percent to 22 percent, and orders of strawberries jumped from 29 percent to 63 percent. When the researchers followed up two years later, the orders of the healthier items remained just as high. And just as important, revenue at the chain continued to increase.

Working with restaurants has been important to Economos ever since her groundbreaking efforts on the

TV ADS WORK



Fast-food chains have come under fire for their advertisements to children, and now research has put a number on just how effective that marketing can be. Preschoolers who saw a moderate to high number of child-targeted TV ads increased their likelihood of consuming the fast food by about 30 percent, accord-

ing to a study by Madeline Dalton, N85, NG94, professor of pediatrics at Dartmouth's Geisel School of Medicine.

Dalton surveyed about 550 parents about the channels their children watched and how much fast food from Subway, McDonald's, and Wendy's they had eaten in the past week. The researchers then cross-referenced the data with a list of fast-food commercials from those restaurants that had aired over that time. The association was independent of socioeconomic status, how often their parents ate fast food, and other factors.

Shape-Up Somerville project nearly 15 years ago. That initiative, which continues today, helped to slow childhood obesity in one urban community by tackling it from all sides, including improving school lunches and making it easier for kids to walk around the city. But a key component was encouraging local restaurants to become “Shape-Up approved” by meeting certain nutritional criteria. Eventually, the team convinced restaurants to sign on, but business owners were initially concerned that changing their menus might hurt profits. That’s one reason the Silver Diner experience was so encouraging. “The business case was extremely important,” Economos said, to prove that healthier items and achieving business goals weren’t mutually exclusive.

Over the past 15 years or so, some restaurants have been making strides. McDonald’s, for example, added apple slices to its menu in 2004, driving annual sales of apples meant for slicing from 132 million that year to more than 506 million by 2015. It also took soda off the Happy Meal section of its menu board, and now offers only milk, water, and 100-percent juice; it announced it will add a lower-sugar juice this year. Since 2013, it has offered a smaller kids-sized fry and added low-fat yogurt as an option in 2014.

“Our menu has evolved over the years, and so has our mind-set around how we engage our customers on nutrition,” McDonald’s nutritionist Julia Braun has said. “No matter where in the world our customers are located, we want them to have the information they need to make the choices that are right for them when they visit McDonald’s.”

Restaurants are clearly interested in kids and nutrition. When the National Restaurant Association surveyed 1,300 professional chefs for its What’s Hot 2017 Culinary Forecast, “healthful kids’ meals” ranked third out of 119 food trends.

But there remains a lot of room for improvement. A 2016 Tufts study

FAST-FOOD QUIZ

See what you know about feeding kids on the go.

1. For children ages five to twelve, how many calories should a meal contain?

- (a) 200-400
- (b) 400-600
- (c) 600-800

Answer: (b) In a survey conducted by Tufts researchers, two-thirds of parents over- or underestimated the number of calories kids need at a meal.

2. How many calories do you save ordering a grilled chicken sandwich instead of fried?

- (a) 80 calories
- (b) 120 calories
- (c) 170 calories

Answer: (c) The chicken in McDonald’s Artisan Grilled Chicken Sandwich has 130 calories, versus 300 in the Butter milk Crispy Chicken Sandwich. Include the roll and mayonnaise dressing, and the latter totals 560 calories.

3. About how many teaspoons of sugar are in a medium Coca-Cola at Burger King?

- (a) 10
- (b) 14
- (c) 19

Answer: (c) That’s more than three times the maximum added sugar the American Heart Association recommends children should have in a day.

4. Swapping apple bites for fries in a Wendy’s kids’ meal will save how many calories?

- (a) 125
- (b) 160
- (c) 195

Answer: (c) A value-size fry has 230 calories, versus 35 for the apples.

5. Which McDonald’s dessert has the fewest calories?

- (a) vanilla kiddie cone
- (b) chocolate chip cookie
- (c) small strawberry shake

Answer: (a) The kiddie cone has only 45 calories, the cookie has 170, and the shake packs in 500.



CALORIE COUNT



When it comes to calories, “nonchain restaurants can be just as bad as chain restaurants,” said Susan B. Roberts, director of the Energy Metabolism Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts. Her lab looked at independent restaurants around Boston, San Francisco and Little Rock, Arkansas, that served a range of cuisines, including Greek and Italian. An entrée with side dishes at these restaurants still averaged about 1,200 calories, a surprising 49-percent higher than the calories of the most popular meals at the most popular restaurants nationwide—and about half of the daily energy requirement for adults in a single meal.

looked at kids’ meals at the top 20 restaurants with kids’ menus. Most of the meals did pretty well on calories, but many exceeded national recommendations for fat, saturated fat, and sodium. Economos said that restaurants are changing for the right reasons—they see an obligation to the next generation. Still, in talking to restaurant owners and industry leaders, she heard one thing over and over: Customers need to order it for us to continue to keep it on the menu.

“We decided to continue our work on supply and pushing that behind the scenes,” Economos said, “while moving toward a demand campaign as well.” That meant bringing their messages right to parents.

ANYONE WHO HAS TRIED to get toddlers to eat their vegetables might assume that kids would be tough to win over to healthier food. But it turns out that they’re less picky than many think. Even though few restaurants offer fruits and vegetables as a side dish by default, one Tufts study found that most children were neutral or positive about receiving them with their kids’ meals instead of fries. A later survey found that kids were also receptive to getting milk, water, or flavored water instead of soda. Those surprising results “gave us the first inclination,”

said Linda Harelick, ChildObesity180’s director of operations and communications, “that maybe kids are more open to these ideas than what some parents or adults would think.”

So they needed to get parents on board—specifically, the mothers. Fathers and others are important, of course, but a well-established body of research indicates that mothers, even today, remain “the nutritional gatekeepers inside and outside the home,” Economos said. “We had to make sure we appealed to the segment of the population that would have the largest impact on children’s orders.”

When the ChildObesity180 researchers started thinking about what a campaign to sway moms would look like back in 2013, Harelick figured they would be educating them about calories, especially with new menu labeling rules on the way. A review of the research on labeling, co-written by Economos, predicted mixed results, though: Labels reduced the calories people purchased in some settings and among some customers, but had little effect in typical fast-food restaurants.

And when they started talking to moms in focus groups in 2015, in an effort to meet consumers where they are, the researchers realized that asking them to count calories wasn’t going to work. Few parents have the time and inclination to add up calories before placing an order inside a restaurant,

Harelick said. “They are certainly not going to be looking at calorie counts on the drive-through menu.” What they heard instead was that fast food takes away some of the stresses moms face. “It’s convenient, fast, inexpensive, makes their kids happy; it fills them up,” Harelick said. In some communities, eating out is cheaper than shopping and cooking at home.

The focus-group research made clear the cost-benefit analysis families were conducting, especially when facing food insecurity. “They don’t want their kids to be hungry, but they also see their kids and other kids getting larger. They recognize that fast food is not the healthiest option. They feel incredibly guilty,” Harelick said. “There is this tension between wanting to raise healthy, happy, and successful children and the other stresses they face.”

Erin Hennessy, J99, N03, MG03, NG10, a research assistant professor with ChildObesity180, has done extensive research on understanding how parents influence their children’s eating habits. Hennessy points to a large body of evidence on the benefits of being what experts call an authoritative parent: “Someone who is responsive to their child’s needs, hears their child, reasons with their child, negotiates, but also has expectations and demands and rules,” Hennessy said. “And we know that that type of parenting style is associated with the most positive child health outcomes,” including eating habits. However, in today’s 24-hour, all-access food environment, there are many challenges and obstacles that parents face.

Taken together, the researchers knew that to be able to create an effective public health campaign, messages had to be about empowering mothers to set some boundaries, while also providing choices. It had to be inspiring, motivating, fun, and celebratory. And it had to offer a number of small changes that, taken together, could make a big difference.

THE RESULT OF THE TUFTS research was “You’re the Mom,” a public health campaign aimed at moms of five- to ten-year-olds. They chose to test it in Springfield, Massachusetts, a city where nearly 1 in 3 of 154,000 residents live in poverty.

To amplify consumer demand for healthier foods, the researchers focused on motivating moms to make a handful of simple swaps at the counter: choose grilled instead of fried, milk or water instead of soda, and order a fruit or a vegetable as a side. Just as important, order off the kids’ menu. Research shows that fewer than half of children order off the children’s menu, Economos said. And when they get something from the adult menu, “the likelihood is they are ordering an entrée that is twice the size of what they need.”

This is a problem, because even as restaurants try to improve children’s options, they aren’t really reworking their core products. A 2015 study led by Alice H. Lichtenstein, director of the Cardiovascular Nutrition Laboratory at the HNRCA, showed that the portion size, calorie count, and sodium content of the most popular items at three major fast-food chains basically hadn’t changed since 1996. Over those years, calories in a large cheeseburger meal with fries and a regular cola ranged from 1,144 to 1,757 among the chains. That’s as much as 110 percent of the 1,600 calories a moderately active eight-year-old needs in a day.

To rollout their campaign, the ChildObesity180 team worked with an advertising company on a suite of marketing materials. They created a website, social media posts, and radio and billboard ads. They even commissioned an artist to create heroic murals of two Springfield moms on buildings downtown. Keeping the message positive was essential, Hennessy said. “It’s really about getting people to hear you as opposed to tune you out.”

The Tufts researchers then set out to see what parents thought of the campaign and whether it affected what parents ordered and kids ate. In a research coup, they managed to get permission from a large, well-known restaurant chain—one with a name they can’t disclose—to interview patrons. Three days a week for four months the Tufts team watched families order food and then approached them with questions. “For a gift card,” they asked, “would you give us your receipt and fill out a survey?” And after that, they moved in for the kicker: Could the researchers take the leftovers back to the lab? Despite some surprised looks, they managed to get thousands of people to take part.

Back in Boston, the researchers analyzed each family’s half-eaten hamburgers and remaining french fries to determine how many calories the kids were consuming. The researchers had used the same method in a pilot study that found kids at four fast-food restaurants ate an average of 519 calories per meal. They also consumed fewer calories,

sodium, and sugar when they ordered off the kids’ menu.

The Springfield study will take that analysis a step further, to see whether the You’re the Mom campaign reduced calories ordered and consumed. They expect to report the results soon, and initial findings are promising, but one thing was certain: The moms welcomed the campaign and its positive message. “When moms are strong and they’re confident,” one of the women said, “the community is a greater place.”

THE TUFTS TEAM HOPES the “You’re the Mom” campaign will catch on nationwide. After the Springfield project ended, they collected the advertising materials and put together a free digital “toolkit” for other communities to use (available at childobesity180.org/yourethemom.) They’ve already had interest from about forty other organizations across the country.

With the huge problem of childhood obesity, it’s tempting to wonder whether small changes in restaurant menus and parent attitudes can make a difference. “That’s the point,” Hennessy said. “You save 25 calories from this, 30 from that.” It’s an excess of fewer than 200 calories a day that contributes to obesity. Economos’s Shape-Up Somerville project showed that you need to attack nutrition problems from all sides, Hennessy said. “The whole premise was around not making one big change, but making all sorts of little changes.”

Many experts would love to see the end of drive-through culture and a return to home cooking. “That would be great, but I’m grounded in reality,” Economos said. “I’ve spent my entire career in low-income communities trying to provide change for low-income children. My goal is to make it better. If you are going to go, here’s a better option.”



A mural and ad from the You're the Mom campaign.

Contact Julie FLAHERTY at julie.flaherty@tufts.edu.

CALLED TO SERVE

They wanted to do something good for the world. It became the foundation for a career. **BY LAURA FERGUSON**

STUDENTS COME TO THE FRIEDMAN SCHOOL from any number of places—academia, business, government, the nonprofit sector—but they all share one goal: to serve the public good, whether by transforming our food systems or improving public health. Many incoming Friedman School students have already worked for such organizations as AmeriCorps and the Peace Corps. When they arrive they'll find a similarly devoted community—people like Jennifer Hashley, director of the New Entry Sustainable Farming Project, and Tisch Faculty Fellow Fang Fang Zhang. And now the Friedman School is doing even more to support future leaders who have demonstrated a devotion to service. The new Service Scholars Program (nutrition.tufts.edu/students/service-scholars-program) provides scholarship support to match or exceed—up to a full scholarship—the educational stipends students have previously earned by participation in most service programs. Here, Hashley, Zhang, and three service scholars share their passion for service.

ADOPTING A PLANETARY PERSPECTIVE

Farah Ahmad, service scholar master's candidate

Growing up in Baghdad, Farah Ahmad remembers volunteers reaching out to help her struggling family and others even worse off. "I saw how concerned they were for our safety," Ahmad said. "That's got me thinking that I too wanted to be a person who helps others."

Shortly after Ahmad's family immigrated to Massachusetts, she had her first opportunity. While participating in a Hurricane Katrina relief trip, she was impressed by the work of AmeriCorps volunteers. So after graduating from the University of Massachusetts Boston in 2015 with a degree in environmental science, she joined AmeriCorps VISTA as a Green Initiative project leader, working with YouthBuild USA.

Now as a service scholar at the Friedman School, Ahmad focuses on food waste. The United Nations estimates that about 800 million people suffer from chronic undernourishment every day, she said, "not because we don't produce enough food, but because we waste so much." The Friedman School, she said, is helping her connect the dots between the impact of current food practices and threats to the planet's future. "If everybody does their part," she said, "we can solve the challenges we face."





CULTIVATING INSPIRATION FROM THE GROUND UP

Claire Loudis, service scholar master's candidate

YOU CAN'T TALK about Southern culture without talking about food. Claire Loudis discovered that when, during four years as an AmeriCorps volunteer in post-Katrina New Orleans, she witnessed a city reinventing itself. Chefs who made great comfort food for AmeriCorps home-building crews “would talk about buying all the ingredients with food stamps,” she said. “It was just so tough to get the basics of fresh fruits and veggies.”

Loudis was intrigued when she discovered a thriving community-garden movement in New Orleans, and began volunteering at Growdat Garden in City Park, where high school students worked in exchange for pay and academic credit. She also took courses at an herbal-medicine shop run by a registered nurse who impressed Loudis with her drive “to empower people in a very poor neighborhood to think about taking care of themselves.”

These experiences, among others, sparked a fascination for the connections between food, health, and equity. “The Friedman School appealed to me because of its interdisciplinary approach,” the service scholar said. Loudis was also drawn to the university-wide graduate program Water: Systems, Science & Society, “because of the impact water and climate change have on New Orleans.” The interdisciplinary culture of the Friedman School, she said, helps fresh ideas thrive. “With these complex issues, there is no one way to approach a solution,” she said. “You have to open yourself up to consider everything.”

ADVOCATING FOR FOOD EQUITY

Alyssa Melendez, service scholar master's candidate

Oregon's rural Columbia River Gorge region has expansive apple, pear, and cherry orchards. Yet a recent study revealed epidemic hunger throughout all five counties. Alyssa Melendez saw this disparity firsthand in 2016, when she joined the Jesuit Volunteer Corps Northwest (JVCNW) and worked for a year with the Gorge Grown Food Network, a non-profit building a resilient and inclusive food system that improves the health and well-being of the community. “It was through that experience,” she said, “that I knew what I wanted to do with my life.”

As a service scholar, Melendez is studying food systems and food equity, carrying on an ethos that goes back to her childhood. She grew up in a Catholic family, she said, “and I always had a heart for service and social justice.” On the path ahead, she'll take direction from the highly collaborative JVCNW community. The work is “about walking alongside people,” she said. “I think of myself more as an ally—and when we work together, that's when real change happens.”





BUILDING A FUTURE FOR FARMERS

Jennifer Hashley, G05, director of the New Entry Sustainable Farming Project

WITNESSING SUBSISTENCE FARMING during four years of Peace Corps service in Honduras, Jennifer Hashley said, drove home “how much of the world is struggling to feed themselves.” So she jumped at the chance to work at the New Entry Sustainable Farming Project, which helps refugees, immigrants, and others get started in agriculture. She became project director in 2006. “It’s been an incredible experience building programming to help people who have this dream of farming,” she said.

In 2016, as an Eisenhower Agriculture Fellow, Hashley joined a global leadership network that traveled through Nigeria, Ghana, and Liberia to learn about farmer training, agricultural innovations, and scaling-up strategies – insights that will help inform the New Entry project. “One of my favorite days is the annual farm tour,” she said. “I love hearing the farmers talk about how amazing it is to fulfill their dream and how proud they are of what they’ve accomplished. There’s nothing better than that.”

BRINGING NUTRITION KNOWLEDGE DIRECTLY TO FAMILIES

Fang Fang Zhang, associate professor and inaugural Miriam E. Nelson Tisch Faculty Fellow

To improve the long-term health of pediatric cancer survivors, cancer epidemiologist Fang Fang Zhang is investigating patterns of weight gain. Her studies have shown that four- and five-year-old patients, for instance, develop insatiable cravings for salty foods and sugary treats that persist even after treatment ends. These eating habits put young cancer survivors at risk of diabetes and obesity as adults.

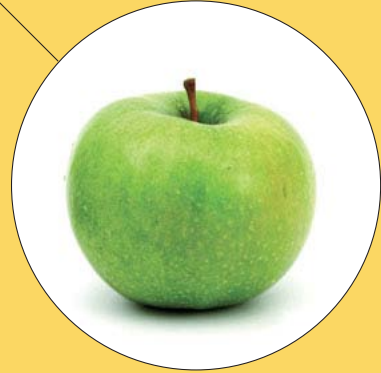
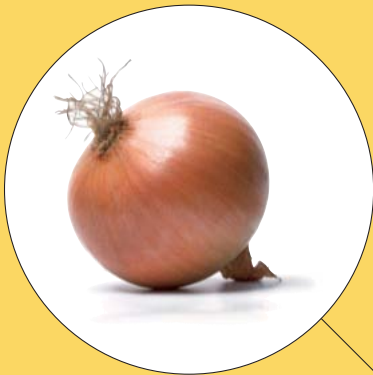
For Zhang, timely communication is vital to changing behavior. “It is critical that we incorporate nutrition counseling into patient care and recovery strategies,” she said. One strategy she developed as a Tisch Faculty Fellow, sponsored by the Jonathan M. Tisch College of Civic Life, is the Healthy Eating and Active Living (HEAL) online intervention. The program gives parents tools to transition the entire family into healthy eating and active living as soon as their child completes early-stage cancer treatment. Through this unique partnership with patients, family members and oncology care providers, she is honing effective strategies that incorporate nutrition into cancer care.

On the horizon are further studies and outreach strategies. “We need persistence to push this forward,” she said. “In time, I know change will come.”



Connect

KEEPING UP WITH THE TUFTS COMMUNITY



WHAT DO THESE FOODS HAVE IN COMMON?

These and many healthy foods are heavy in excess short-chain carbohydrates, such as fructose, lactose, and sugar alcohols, collectively known as FODMAPs. Some people's digestive systems can't handle them, causing gut pain, bloating, and other uncomfortable symptoms. *A Teen's Guide to Gut Health* by registered dietitian Rachel Meltzer Warren, N04, is an evidence-based overview that can help adolescents and even adults figure out which FODMAPs might be causing them problems.



Introducing Brighter World

With the launch of the largest fund-raising initiative in its history, Tufts University is enhancing its ability to tackle the globe's toughest challenges. **BY LAURA FERGUSON**

TUFTS UNIVERSITY ON November 4 launched a \$1.5 billion campaign that will strengthen teaching and research, support a distinctive culture of collaboration and innovation, and advance the university's capacity to translate brilliant ideas into practical solutions for global problems.

More than 400 alumni and friends celebrated the start of the public phase of *Brighter World: The Campaign for Tufts* at the Museum of Fine Arts in Boston. Commitments leading up to the launch have contributed more than \$566 million, helping bolster Tufts' longstanding research efforts and providing more than \$148 million to support financial aid. The comprehensive campaign, the largest in the university's history, will accelerate Tufts' "upward trajectory as a student-centered research university that fosters a global perspective and nurtures leadership," said President Anthony Monaco.

"Tufts continues to attract among the very best and brightest scholars and students, united by a passion for learning and discovery,"

he said. "Our graduates go out into the world with the knowledge and inspiration to make a positive difference. With the support of alumni and others, the *Brighter World* campaign will enable our remarkable faculty and students to fulfill their aspirations and rise to meet the significant challenges of our time."

The campaign will advance the efforts of Tufts faculty and students working toward solutions on critical issues, such as disease prevention, human and animal welfare, global security, obesity and malnutrition, civic engagement, and environmental protection.

For the Friedman School and the Human Nutrition Research Center on Aging (HNRCA), surpassing a \$100 million campaign goal will provide critical support for education, research, and public service. Along with sustaining annual gifts, the HNRCA's funding priorities fall under three themes: Discover (nutrition-and-aging research-innovation funds); Develop (stipends and other support for doctoral students and postdoctoral fellows); and Deliver (funding for community education and other outreach activities).

The Friedman School seeks annual and capital support aligned with its strategic plan (see page 30) and targeted at bolstering its mission of trusted science, creation of new leaders, and public impact. Priority areas range from Food Entrepreneurship and Innovation to Sustainable Food Environments. Learn more at alumniandfriends.tufts.edu/brighterworld.

These efforts combine to “put Tufts in a league of its own,” said Peter Dolan, A78, chairman of the Board of Trustees. “The university’s ascending reputation reflects the extraordinary breadth of excellence in our classrooms and laboratories that is matched by deep engagement with complex problems well beyond our campuses. The critical role that Tufts can play in securing the future of our planet has never been clearer or more urgent.”

Brighter World and its co-chairs will inspire a worldwide community of campaign volunteers, the largest in Tufts’ history, who will emphasize the importance of broad participation across all gift levels, whether it be annual fund donors, those who make planned gifts, or those who make major gifts toward specific scholarship, research, or program needs. Gifts of all sizes will create a stronger Friedman School and HNRCA, helping people worldwide lead healthier lives. Because, as campaign leaders say, “Every Gift is Jumbo.”

MEET THE CO-CHAIRS

Launching and leading an effort of this size requires the commitment and support of many. The campaign co-chairs for the Friedman School and the Jean Mayer Human Nutrition Research Center on Aging (HNRCA) talk about why they are taking part.



**ELIZABETH COCHARY GROSS, N82, NG88,
FRIEDMAN SCHOOL CAMPAIGN CO-CHAIR**

Tufts University trustee; University Campaign Executive Committee member; Friedman School adviser, adjunct associate professor, and former director of admissions and recruitment

I have been deeply involved with the school since 1980, first as a graduate student and later as a staff and faculty member. I have seen the school mature, and I realize what it can become with a successful campaign. In order to have the best faculty at our school, we need to have endowed professorships. To recruit the very best students, we must have endowed scholarship funds for financial aid. This is what our campaign is all about.



**IRWIN M. HELLER, A67, A98P,
FRIEDMAN SCHOOL CAMPAIGN CO-CHAIR**

Member of the legal firm Mintz, Levin, Cohn, Ferris, Glovsky and Popeo; Tufts University trustee emeritus; Friedman School adviser

While Congress wrestles over who gets coverage, the real issue is how we bring down health-care costs. Tufts can provide leadership by both scientific research to determine what foods and lifestyle choices bring healthier living and by influencing public policy to encourage healthy choices. The Friedman School is the only school of nutrition that has the capacity to lead from cell to society.



RONENN ROUBENOFF, HNRCA CAMPAIGN CO-CHAIR

Global head of translational medicine at Novartis Institutes for Biomedical Research; former chief of the HNRCA's Nutrition, Exercise Physiology, and Sarcopenia Laboratory

As funding from government grants has shrunk, I think now is the time for private support to step up. And because of a general assault on truth and facts in today's society, we need trusted research and education more than ever. For me, the most influential lever is to support the training of young scientists. If I can help make it easier for young people to develop as nutritional scientists without being overwhelmed by debt, we will all benefit.



ROBERT M. RUSSELL, HNRCA CAMPAIGN CO-CHAIR

Professor emeritus of medicine and nutrition at Tufts; former director of the HNRCA

Tufts is in a very exciting position. It has recently experienced remarkable growth in international ranking, and is now regarded as a truly world-class educational and research institution. Now is the time to not only consolidate that position, but to increase its momentum toward excellence.

A STRATEGY FOR CHANGE

With diet a leading cause of poor health, inequities, and environmental challenge, the world is facing a nutrition crisis. Fixing it, said Dariush Mozaffarian, dean of the Friedman School, will be crucial for improving well-being, reducing nutrition

disparities, reforming health care, invigorating rural communities and agriculture, and ensuring a strong workforce and economy. “As we have done for nearly 40 years,” Mozaffarian said, “the Friedman School is committed to addressing

NOURISHED CHILDREN, FAMILIES, AND COMMUNITIES

Innovations and Interventions for Lifelong Health

We generate cutting-edge science and translate it into practical solutions for people, schools, worksites, the food industry, and governments to help people eat better and achieve better health across the lifespan.



HEALTHY FOOD FOR ALL

Tackling Hunger and Disparities

We are committed to all people—from struggling American families to migrant workers in South America to malnourished communities in Africa and South Asia—having access to sufficient, healthy food and prospering from good health.



LONGEVITY AND VITALITY

Inspiring Healthy, Active Aging and Preventing Chronic Disease

We know that 70 is the new 50, requiring holistic, evidence-based practices to address the unique stages of aging and create longer, more vibrant lifespans.



SUSTAINABLE FOOD ENVIRONMENTS

Healthier Food and Agricultural Systems

We bring together our diverse and complementary expertise in nutrition, food systems, agriculture, sustainability, and public policy to achieve healthier, more enduring food environments.



these issues by producing trusted science, future leaders, and evidence-based public impact.” As the Friedman School tackles these fundamental challenges, it will be guided by a new strategic plan—outlined below—that was a year in the

making, and the result of the best thinking of nearly 200 stakeholders and experts. To read more about the roadmap for success, visit nutrition.tufts.edu/strategicplan and see the progress at annualreport.nutrition.tufts.edu.

DISCOVERY AND ENTREPRENEURSHIP

Moving Nutrition Forward

In an ever-changing world of technology, global economies, and advancing knowledge, a focus on scientific discovery and entrepreneurship is more vital than ever to creating novel solutions to promote better eating, food systems, and well-being.



CREATING AND ENABLING LEADERS

Developing Pioneers in Nutrition

We recognize that real change comes from the work of many and that our faculty and graduates must lead in their fields to achieve maximum positive change.



PUBLIC IMPACT INITIATIVE

Institutionalizing Advocacy, Policy Change, and Public Impact

We need to transform our academic institution to create formal systems, staff, and structures for bridging the gap between trusted science and practical, real-world applications.



FOUNDATIONAL INITIATIVES

Optimizing Structure and Function

A stronger foundation allows us to reach higher than ever by creating structures and systems that support and enable our faculty, staff, and students to excel.



FIGHTING ALZHEIMER'S WITH NUTRITION AND DIET

A good diet—and positive sleep habits, stress management, and cognitive activities—help disease prevention, expert tells Tufts audience **BY JULIE FLAHERTY**

WHILE PEOPLE MAY not show symptoms of Alzheimer's disease until they are in their sixties or seventies, neurological changes start in the brain more than twenty years before the first symptom. "Alzheimer's disease is not an older person's disease. It's a disease of younger and middle-aged people," said Richard Isaacson, director of the Alzheimer's Prevention Clinic at New York-Presbyterian/Weill-Cornell Medical Center. "And that's how we have to shift the paradigm."

Looking at Alzheimer's disease as a lifelong progression is an opportunity, said Isaacson, the keynote speaker at the Drs. Joan and Peter Cohn and Family Lecture on Nutrition, Inflammation, and Chronic Disease, held October 12 at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts. In 2013, he opened the first Alzheimer's prevention clinic in the country, focusing on nutrition, exercise, and other lifestyle interventions that people can begin well before they reach old age.

While some risk factors for dementia—such as age, family history, and history of head trauma—can't be changed, others can. Isaacson pointed to a 2017 report in the journal *The Lancet* that said one in three cases of dementia could be prevented through lifestyle choices. The report identified nine ways to reduce risk: avoiding high blood pressure, obesity, diabetes, and smoking; focusing on education, physical activity, and social contact; and treating hearing loss and depression.

"Genetics is part of the puzzle, but genes are not your destiny," he said. "You can win the tug of war against your genes." Having the ApoE4 gene, for example, slightly increases your risk of developing Alzheimer's, but one study has shown that exercise works particularly well in reducing dementia risk in people with the gene. "This is exciting," he said. "This means that even people who are at higher risk potentially may benefit more from these very low-risk and cost-effective interventions." These include exercise and nutrition, good sleep habits, stress management, cognitive activities, and social engagement.

Weight management, and particularly reduction of visceral fat, are key. "As the belly size increases," he said, "the memory center in the brain gets smaller."

As for what to eat, a Mediterranean-style diet has the most robust scientific evidence behind it for brain health, Isaacson said. Diet patterns such as very-low carbohydrate and intermittent fasting are promising for Alzheimer's prevention, but more research is needed. The same with wine, cocoa powder, vitamin D, and coffee.

Some interventions work better for some people than others, leading him to believe that diets have to work in conjunction with a person's genetic makeup to prevent dementia. "Precision nutrition," he said, "is really where I think the field is going to go."

Watch the video of the lecture at hnrca.tufts.edu/cohn-family-lecture.

"You can win the tug of war against your genes," said physician Richard Isaacson, founder of the first Alzheimer's prevention clinic in the country.





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Village Life: Dordogne

Exploring the Canadian Rockies

Alaska and the Inside Passage

Cambridge, Oxford & the Cotswolds

Iceland Panorama

Waterways of Russia

Treasures of Southern Africa

Cruising the Rivas:

Italy, France & Spain

Cruise the Heart of Europe

Cruising Patagonia's Chilean Fjords

Apulia: Undiscovered Italy

Israel: Timeless Wonders

Island Life in Cuba

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Travel-Learn

Why Humanitarian Aid Matters

3 questions with Gregory Gottlieb **BY JULIE FLAHERTY**

PRESIDENT DONALD TRUMP'S 2018 budget proposal includes steep cuts to the State Department, the U.S. Agency for International Development (USAID), and the United Nations. That policy change could have lasting impact on humanitarian efforts worldwide, said Gregory Gottlieb, Irwin H. Rosenberg Professor in Nutrition and Human Security and the new director of the Feinstein International Center at the Friedman School. We spoke with Gottlieb, who was the acting assistant administrator for USAID's Bureau for Democracy, Conflict, and Humanitarian Assistance before coming to Tufts, about the challenges ahead.

TUFTS NUTRITION: How does an America First policy affect humanitarianism?

GREGORY GOTTLIEB: The United States has really helped to build the international system of humanitarian relief. We have been the biggest giver, the donor of last resort in many respects. And if you want to change that, you don't do it by saying we're going to cut our budget by 40 percent overnight. That is just going to damage the system. You can't just cut our budget and hope that other nations step in to make up the difference.

TN: How do the United States' humanitarian efforts help improve its standing in the world?

GG: Soft power like humanitarian aid can be very beneficial and serve as a tool for political advantages. After the tsunami in Asia in 2004, the fact that we supplied humanitarian assistance allowed our military to collaborate with Indonesia's military. If you looked at how people there viewed the United States, our ratings went way up. The same in Pakistan after the 2005 earthquake. Some of the people who did that

work are still incredibly well thought of. In South Sudan, our humanitarian assistance opened up a better dialogue between Sudan and South Sudan, as they were forced to negotiate about how to move food across the lines. But humanitarian assistance is not the answer in and of itself. Without political will, it doesn't matter how much assistance you provide; it is not going to lead to a solution. There is a lot of aid going to Yemen, but it is not leading to any discussion whatsoever.

TN: What is going to be the bigger challenge for humanitarianism: natural disasters from climate change or crises stemming from conflict?

GG: The U.S. government spends 80 percent of its humanitarian money right now on conflicts, and they go on year after year after year. Yemen, Syria, Nigeria, South Sudan—you can hope that we attain world peace, but I'm going to guess that's not going to happen any time soon. In that case, needs will remain high. In terms of climate, if we get more natural disasters, if we get hurricanes with the frequency that we have been, then we just have to be prepared. You have to train your rescue people. You can build in ways that make your buildings more durable. I think Bangladesh is one of the best examples of how investing in preparedness can save lives. When a typhoon hit in 1991, about 150,000 people died. Now there are better warning systems. There are concrete shelters on higher ground, and they train kids in school about getting to them. In the last typhoon, far fewer people died. The question is, when we look at our humanitarian budget, are we prepared to put more money into preparedness?



Gregory Gottlieb is the new director of the Feinstein International Center.

A FULL CALENDAR FOR OUR COMMUNITY



THE FALL OF 2017 was busy for the Friedman School. It welcomed more than 100 students to the Friedman community, launched the new Friedman School Nutrition Entrepreneurship Program, and celebrated the first anniversary of the school's five-year strategic plan with a town hall meeting sharing accomplishments and priorities for the year ahead.

Farther afield, alumni and friends gathered for recep-

tions at International Union of Nutritional Sciences 21st International Congress of Nutrition in Buenos Aires, the Food & Nutrition Conference & Expo in Chicago, and the American Public Health Association Annual Meeting & Expo in Atlanta. Mark your calendars for a reception at the

American Society of Nutrition in Boston this June. Whether you are attending the conference from near or far, we hope you will join us!

As the Friedman School community grows, so does our alumni association. Our Executive Council now has forty members with representation from all programs as well as a range of professions. The Executive Council focuses on engagement with the Friedman

community, providing alumni like you with opportunities to give back and celebrate alumni achievements through programs such as mentoring and the alumni awards. If you are interested in serving as a volunteer, please visit nutrition.tufts.edu/alumni to submit our volunteer interest form.

And if you have any ideas or feedback about the alumni association please feel free to contact me at gracephelan@gmail.com. I look forward to seeing you during reunion weekend, April 27-28, 2018.

GRACE PHELAN, N05

President, Friedman School Alumni Association

Class Notes

N07

In the second half of 2017, **RACEY HENDERSON (BINGHAM), F07, N07**, launched Ndara, a new business supporting small entrepreneurs in the Central African Republic. Visit its website at ndaratibeafrika.com. She and her family also welcomed a second child, a girl named Lovett Ellie Henderson, born at home on the farm on October 10.

N11

JACKIE MICHETTI (MINICHELLO), N11, and her husband, Anthony, welcomed their first child,

Penelope Linda Michetti, on June 23, 2017. "Our little sweet pea brings joy to our lives," they write.

N14

LAUREN KASKEY, N14, MG14, married Stephen Guerrero in Moretown, Vermont, on August 19, 2017.

ZOE SCHWEITZER, N14, pictured at right, moved up to Mountain View, California, to start a new job. She is the global program manager for the Food Literacy & Teaching Kitchens at the Compass Group at Google.

N15

KATE OLENDER, N15, started a new job as the senior director of health and wellness at the United Fresh Produce Association.

N16

QUINAULT CHILDS, A12, N16, recently started a new job as a



research manager for the Food Futures Lab at the Institute for the Future. "It's a nonprofit, public-education-oriented think tank in Palo Alto, California, that helps people think about all the different factors that will influence the food system, science and technology, education, labor, and governance, so that we can make a plan for the best possible future," Quinault reports. "I use things I learned in Friedman classes every day there."

HYEJIN LEE, N16, is an assistant professor at Konkuk University in Seoul, South Korea.

Gut Reaction

SHELDON ROWAN, a scientist in the Nutrition and Vision Research Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts, serves as our expert.

Q *Can what you eat change your gut microbiome?*

A Absolutely! Almost everything we eat has some effect on our gut microbiomes. There's good reason to be aware of that: We know from a dizzying number of studies that a diverse, well-balanced microbiome is associated with health benefits, such as improved glucose tolerance, better immune function, or better weight control. On the flip side, a poorly functioning gut microbiome, known as dysbiosis, can contribute to Crohn's disease, C. difficile colitis, and even autoimmune diseases.

Increasing dietary fiber and eating diverse fruits and vegetables is a sure-fire way to positively impact our gut microbiomes. And although one might guess that probiotics would have a huge impact, research has shown only minor effects without clear health consequences.

Large-scale changes in our dietary patterns lead to large changes. Volunteers fed diets containing only plant-based foods had very different gut microbiomes from those fed only animal-based foods. One brave lifelong vegetarian ate the

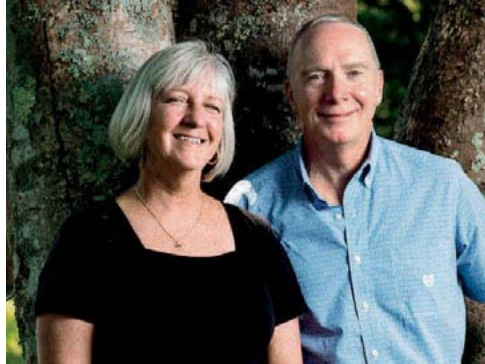
animal-based diet and had the most dramatic changes. Our microbiomes do show some durability, though, as that volunteer's gut flora later returned to baseline. Meanwhile, smaller dietary changes led to less dramatic changes. In one study, volunteers were fed either processed white bread or whole-wheat sourdough. Although the whole-wheat group showed health-metric improvements, the microbiome did not change significantly in either group.

In addition to pointing to the need for larger changes in our dietary patterns, these findings suggest there is no single magic food. Or is there? One group of foods generating tremendous research interest are fermented foods like sauerkraut, kefir, kimchi, and kombucha. Studies show that these foods can change our gut microbiomes more dramatically than any probiotic or even prebiotic. Fermented foods have been eaten by people going back millennia, suggesting that our ancestors were just as interested in enhancing their gut microbiomes as we are today.



Send your questions for "Ask Tufts Nutrition" to Julie Flaherty, Tufts University Office of Publications, 80 George Street, Medford, MA 02155 or email julie.flaherty@tufts.edu.





“My bequest for Friedman allows me to create opportunities for others.”

“I’ve reinvented myself about every 10 years,” says Ann Yelmokas McDermott, NG02, an alumna of the Friedman School of Nutrition Science and Policy and a new member of the Charles Tufts Society as a result of creating a bequest for the Friedman School.

At age 42, McDermott came to the Friedman School to obtain her doctorate and found “an incredible culture, not only in academics and research but in mentorship. I had a whole building full of people whose doors were always open to me.”

Now based in Santa Fe, McDermott is an associate scientist at Johns Hopkins School of Public Health, teaches medical education, and is a consultant creating cross-disciplinary health, nutrition, and physical activity programs. She and her husband, Jay, have created a bequest supporting professional development for the Friedman School’s faculty and students.

“As a first-generation college student and a first-generation native English speaker, I know how family finances can impact your opportunities,” she says.

The student portion of her gift supports professional growth, including conferences and leadership opportunities. For faculty, her focus is time: “The demands on faculty to secure funding puts pressure on time for things like course development and mentoring. I hope to preserve that important time.”

When asked how she and other alumni can support the Friedman School’s future, she recalls a bit of wisdom from her experience coaching college athletics: “If we do this together, and each bring our best, we can go a lot further.”

For information about including a gift for Tufts in your estate plans,
please contact the Gift Planning Office:
888.748.8387 • giftplanning@tufts.edu • tufts.edu/giftplanning

The
CHARLES TUFTS
Society

➔ Change of address? Questions? Email julie.flaherty@tufts.edu.



4 Health Incentives



12 Climate Top 10



24 Service Scholars



URBAN OASIS

“Parklets” turn a couple of parking spaces into a gathering place for walkers and bikers, subtly encouraging locals to move more and drive less. Certificate graduates are advocating for new parklets, bike lanes, and other changes to the built environment in a bid to make their communities healthier.

FOR MORE ON THE STORY, TURN TO PAGE 14.