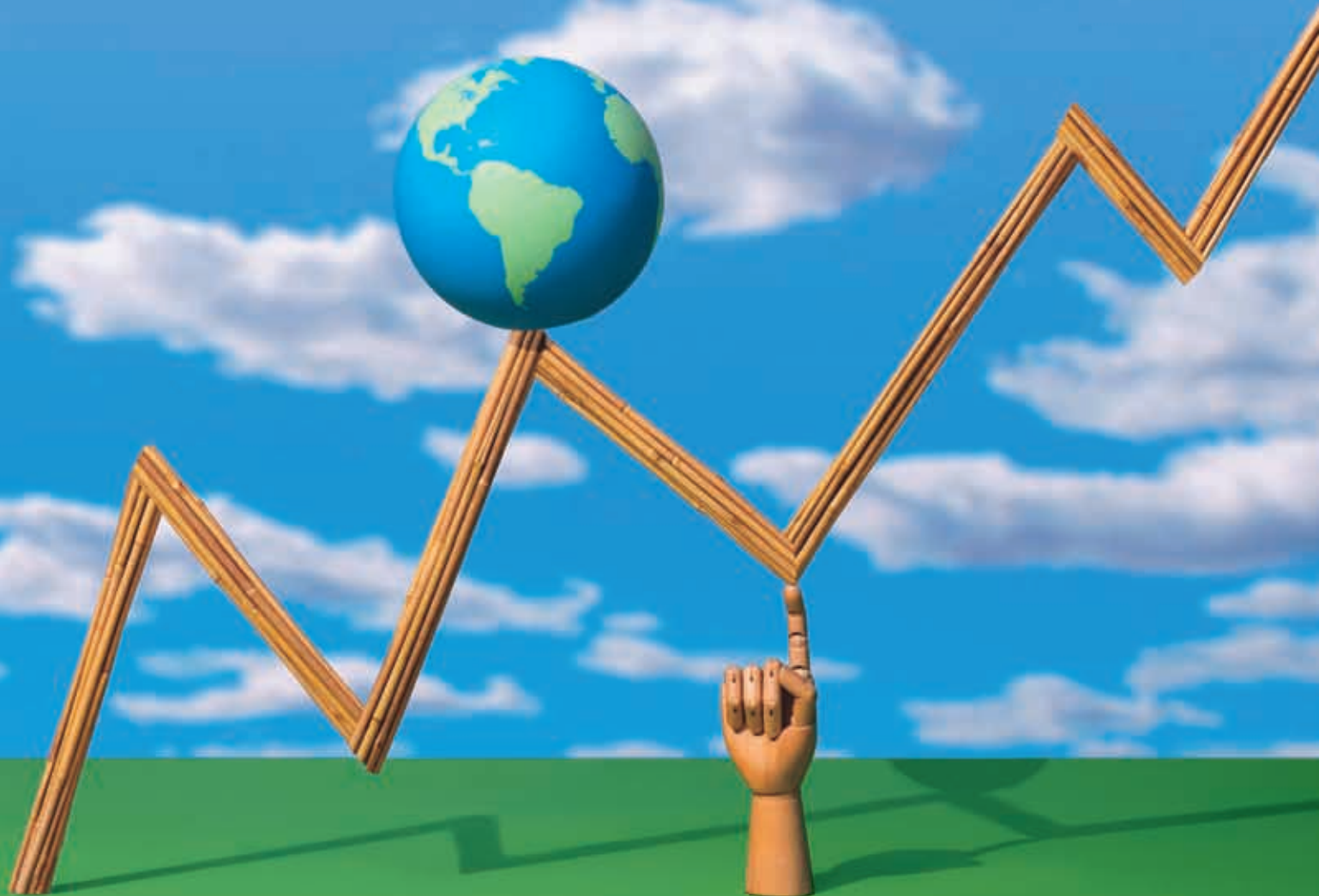


Tufts

NUTRITION



Green Is Good

The New Bottom Line in Business

PLUS: EYES HAVE IT • WHEN FAT WON'T SCAT • RUNNERS REVISITED

Running to lose? Don't overcompensate

For this installment of "Ask Tufts Nutrition," Assistant Professor Jennifer Sacheck, Ph.D., NO1, serves as our expert.

Q: I recently read about a study that followed a group of people who burned about 500 calories a day when they began exercising. After 12 weeks, most people had lost weight, but some had actually gained weight. Does this mean I still might not lose weight, even if I start running seven days a week?

A: If you add additional physical activity into your day while keeping your calorie intake the same, you will eventually lose weight. People who lose weight from exercise usually do so because they burn more calories from exercise but consume the same amount of food; eat healthier foods or eat less often because they are exercising; or burn more calories at rest because of an increased metabolism.

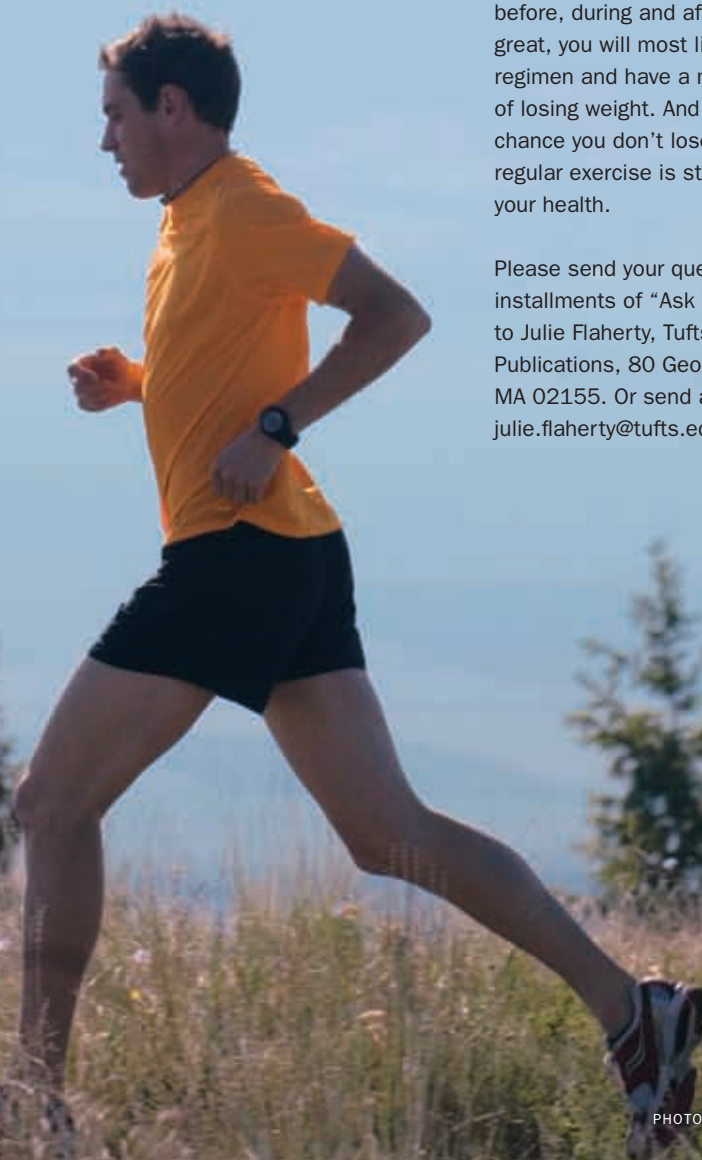
You may have heard that muscle weighs more than fat and guess that building the former cancels out the loss of the latter. But at the end of the day, when people change their body composition for the better, they typically do lose weight, especially women, who are not capable of putting on a lot of "muscle mass."

But it does take a net loss of about 3,500 calories to lose one pound. To put this into perspective, running or walking one mile burns about 100 calories, so you would have to run at least five miles a day for seven days in order to lose one pound while keeping your caloric intake constant. People may gain

weight after initiating an exercise program if they believe they have burned more calories than they actually have and feel justified in eating more. It doesn't take much: An extra cup of Ben & Jerry's ice cream can cancel out five miles of running. People may also offset the stress of exercise by moving less the rest of the day.

If your goal is to lose weight, my advice would be to exercise most days of the week, if possible, but don't overcompensate for the calories that you burn. Try cutting back on less-nutritious and empty-calorie foods, too. Fuel your body and working muscles with healthy foods so that you feel energized before, during and after exercise. If you feel great, you will most likely keep up your regimen and have a much better chance of losing weight. And even if by some chance you don't lose weight, know that regular exercise is still extremely good for your health.

Please send your questions for future installments of "Ask Tufts Nutrition" to Julie Flaherty, Tufts University Office of Publications, 80 George Street, Medford, MA 02155. Or send an email to julie.flaherty@tufts.edu.



FEATURES

6 Out of Sight

by Helene Ragovin

Eating well today could save your peepers tomorrow. Spinach soufflé, anyone?

18 D is for Dirt

by Julie Flaherty

School gardens are all the rage. Why it's good ... we think.

24 Beyond the Finish Line

by Marjorie Howard

What these novices got out of running the Boston Marathon, besides the aches.

36 Live Fat, Die Old?

by Miriam Nelson, N85, N87

Something's missing from the news on obesity and longevity.

DEPARTMENTS

2 Letters

3 From the Dean

4 A La Carte

Research in brief

26 On Campus

Friedman School news

30 University News

32 Beyond Boundaries

34 Alumni News

COVER STORY

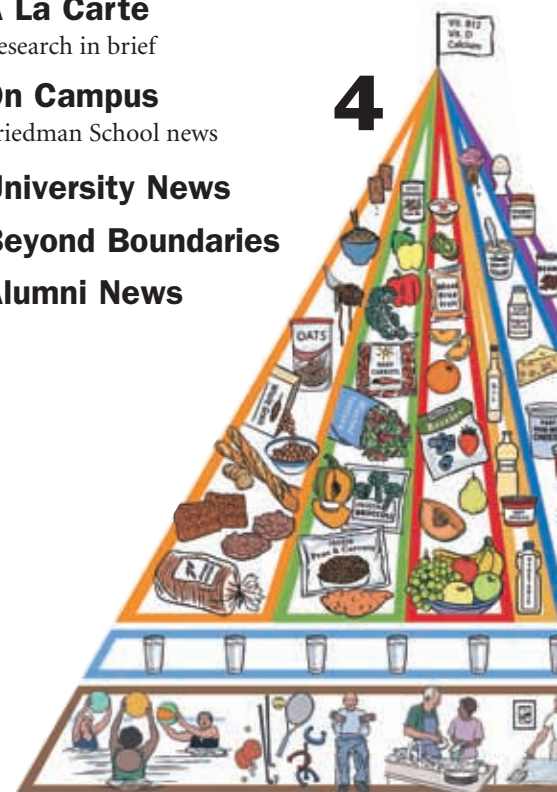
11 Buy Me, I'm Green

by Julie Flaherty

Why every business-minded company needs a tree-hugger on staff.

Cover illustration by Holly Lindem

4



TN AROUND THE WORLD

I picked up a copy of *Tufts Nutrition* at an alumni event in Hong Kong recently, and I wanted to say kudos for a fabulous publication. I read the issue cover to cover, and the design, photos and illustrations are stunning. (I'm currently an editor at the Asian edition of *Time* magazine, so I've seen a lot of layouts.) I've been enjoying the past issues online, too.

I'm finishing my public health degree at Hong Kong University, so I especially liked the article about family doctors being trained to give nutrition advice. The Beezlebubs gave a concert a couple of weekends ago as part of their first Asian tour and they handed out Tufts Post-its and other goodies, which is where I picked up *Tufts Nutrition*. The combination of the concert and discovering the magazine meant I was a very proud Jumbo.

HANNA A. KITE, JOI



HIGH PRAISE

Tufts Nutrition won a silver medal in the Best Overall Magazine category from the Council for Advancement and Support of Education (CASE) in its 2008 District I Communications Awards competition.

The awards recognize outstanding achievement in higher education, independent school and non-profit organization communications.



A SWEET CHALLENGE

Last year, Dean Eileen Kennedy issued a fundraising challenge to the faculty and staff. They would be divided into three teams representing administration, science and social science. The leader of the team with the lowest participation rate would get a pie in the face. Although the race was very close,

Professor Patrick Webb, representing the social sciences, ended up wearing dessert at the December faculty meeting. All told, in the last fiscal year, an unprecedented 35 percent of faculty and staff pledged to the Friedman School's annual fund, providing outstanding support for school priorities, including student financial aid.

TALK TO US *Tufts Nutrition* welcomes letters with concerns, suggestions and story ideas from all its readers. Address your correspondence, which may be edited for space, to Julie Flaherty, Editor, *Tufts Nutrition*, Tufts University Office of Publications, 80 George Street, Medford, MA 02155. You can also fax us at 617.627.3549 or e-mail julie.flaherty@tufts.edu.

Tufts

NUTRITION

VOLUME 9, NO. 2 SPRING 2008

EDITOR
Julie Flaherty

EDITORIAL DIRECTOR
Karen Bailey

DESIGN DIRECTOR
Margot Grisar

DESIGNER
Betsy Hayes

CONTRIBUTING WRITERS
Marjorie Howard, Miriam Nelson,
Helene Ragovin, Mark Sullivan

CONTRIBUTING EDITOR
Leslie Macmillan

EDITORIAL ADVISORS
Eileen Kennedy, D.Sc., Dean
Gerald J. and Dorothy R. Friedman
School of Nutrition Science and Policy

Patrick Webb, Ph.D., Dean
Academic Affairs

Cindy Briggs Tobin, Director
Development and Alumni Relations

Tufts Nutrition is a publication of the Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy at Tufts University for alumni, key university personnel, students, faculty, staff and others with an interest in the school.

The mission of the school is to passionately advance nutritional well-being for people worldwide through excellence in research, teaching and the shaping of public policy.

We welcome your letters.
Correspondence should be sent to:
Julie Flaherty, *Tufts Nutrition*,
Tufts University Office of Publications,
80 George Street, Medford, MA 02155
Tel: 617.627.4273 Fax: 617.627.3549
E-mail: julie.flaherty@tufts.edu

We're online. Please check out the magazine and the world of *Tufts Nutrition* at <http://nutrition.tufts.edu>.

Printed on recycled paper.



Putting scholarship into practice

EARLIER THIS YEAR, THE UNITED STATES CONDUCTED ITS LARGEST-EVER RECALL OF beef. The recall was precipitated by a video showing “downer” cows—ones that cannot walk—being pushed into a slaughterhouse. The story raises issues of animal welfare, food safety, nutrition and ethics. It also highlights the essentiality of evidence-based public policy. Back in 2000, Friedman School faculty member Kathleen Merrigan, Ph.D., then administrator of the USDA’s Agricultural Marketing Service, banned downer beef in USDA school lunch purchases. These cows have higher rates of infection, and rejecting use of downer beef in schools erred on the side of caution.

Needless to say, these regulations were not without controversy. However, Kathleen, who now directs our Agriculture, Food and Environment (AFE) Program, developed science-based approaches to ensure the safety of foods served in schools. This is just one example of how Friedman School faculty have put their scholarship into practice to develop science-based public policy.

Another example is Willie Lockert, Ph.D., who served on the National Organic Standards Board and helped set the first-ever USDA definition for labeling organic products. Willie is retiring after 27 years of service to Tufts University and the Friedman School. (See “Oh Yeah? Says Who?” page 28.) The students and faculty who have had the pleasure of interacting with Willie can attest to the intellectual challenges and verbal sparring that always ensued in their exchanges with him. The AFE program is stronger because of Willie’s input, which is one reason the Alumni Association honored him with its Faculty Award this spring. Congratulations, Willie.

We also bid farewell to Rob Russell, M.D., who has announced he will be stepping down as the director of the Jean Mayer USDA

Human Nutrition Research Center on Aging. (See story, page 27.) Rob’s leadership and his contributions to research were apparent as Tufts celebrated the HNRCA’s 30th anniversary this past fall. There are few, if any, significant issues in nutrition and aging over the past three decades that have not had a direct

“While much of this is uncharted territory, the potential for improving health and well-being is enormous.”

tie to the HNRCA at Tufts. The cutting-edge research and its effects on policies and programs have made a major contribution to improving lives. On a more personal note, Rob has been a terrific partner in helping to strengthen nutrition research and training at the Friedman School.

I often refer to Bea Rogers, Ph.D., (“The Cartography of Hunger,” page 5) as a founding member of the school, as she was not only one of its first faculty members but part of the Tufts team when we were still the Nutrition Institute. Bea’s teaching and mentoring have touched the lives of hundreds of students. It’s no surprise then that she received

the 2007 Friedman School Distinguished Faculty Award. The award was a fitting acknowledgment of her contributions.

Finally, a word about the ways the public and private sectors are collaborating to improve the nutritional status of people worldwide. Our cover story (“Buy Me, I’m Green,” page 11) looks at some ways the private sector is addressing environmental issues. Globally, governments and international organizations are actively discussing models of ways to harness the energies of food companies, retailers and public-sector groups to build food and nutrition capacity. As a designated United Nations University Associated Institution, the Friedman School is working with colleagues in Asia, Africa and Latin America to pilot test strategies to enhance food and nutrition capacity using public-private sector alliances. Many of these newer models of collaboration have not

been tested, and indeed, some people are skeptical that success stories will emerge. But while much of this is uncharted territory, the potential for improving health and well-being is enormous.

As another academic year draws to a close, I continue to be impressed with the energy, commitment and talent of our students, faculty and staff. Congratulations to our graduates of 2008.

EILEEN KENNEDY, D.Sc.

A pyramid scheme for seniors

AS WE GET OLDER, OUR BODIES TEND TO SLOW DOWN, BOTH IN PHYSICAL activity and in metabolism. While we may not need the number of calories we once did, we do require the same or higher levels of nutrients. Yet on average, people over age 70 consume less than half the recommended amounts of calcium, potassium, fiber and vitamins D, E and K.

The Modified MyPyramid for Older Adults, created by Tufts researchers, depicts some creative ways to meet those daily requirements, including convenient sources of fruits and vegetables, whole-grain versions of favorite foods and practical ways of keeping active.

Tufts created the first modified food guide pyramid for older adults in 1999. Since then, the USDA has launched the Web-based MyPyramid.gov, which customizes dietary guidance based on sex, age, height, weight and exercise habits. But for those older Americans who do not have Internet access or feel uncomfortable using interactive programs,

a team at Tufts, led by Alice H. Lichtenstein, D.Sc., the Stanley N. Gershoff Professor of Nutrition Science and Policy, updated the easy-to-use graphic, which was published in *The Journal of Nutrition*.

The researchers emphasize that fiber should come from whole grains, fruits and vegetables, rather than from supplements, which in excess can interfere with mineral absorption. They also point out that frozen fruits and vegetables—such as the berries, carrots and peas on the pyramid—can be practical alternatives to fresh.

“These choices are just as nutritious, easier to prepare and have a longer shelf life, minimizing waste,” Lichtenstein says. “Such factors are important to consider when arthritis kicks in or when dark, cold days mean it is less likely someone will go out to replenish their refrigerator stores. Single-serve options are useful to keep on hand, especially when preparing food for one.”

For people who need easy-to-chew options, canned, low-sodium and stewed veggies are also represented on the chart, as is lactose-free milk for older adults who find dairy difficult to digest. Vegetable oils and soft spreads fill the fats column as good sources of vitamins E and K.

With a flag at its peak, the new pyramid highlights a few key micronutrients that elders may have a hard time getting from food alone, and may warrant supplements. Older adults may want to ask their doctors about their levels of vitamin D, calcium and especially B12, which can be difficult to absorb from food as people get older.

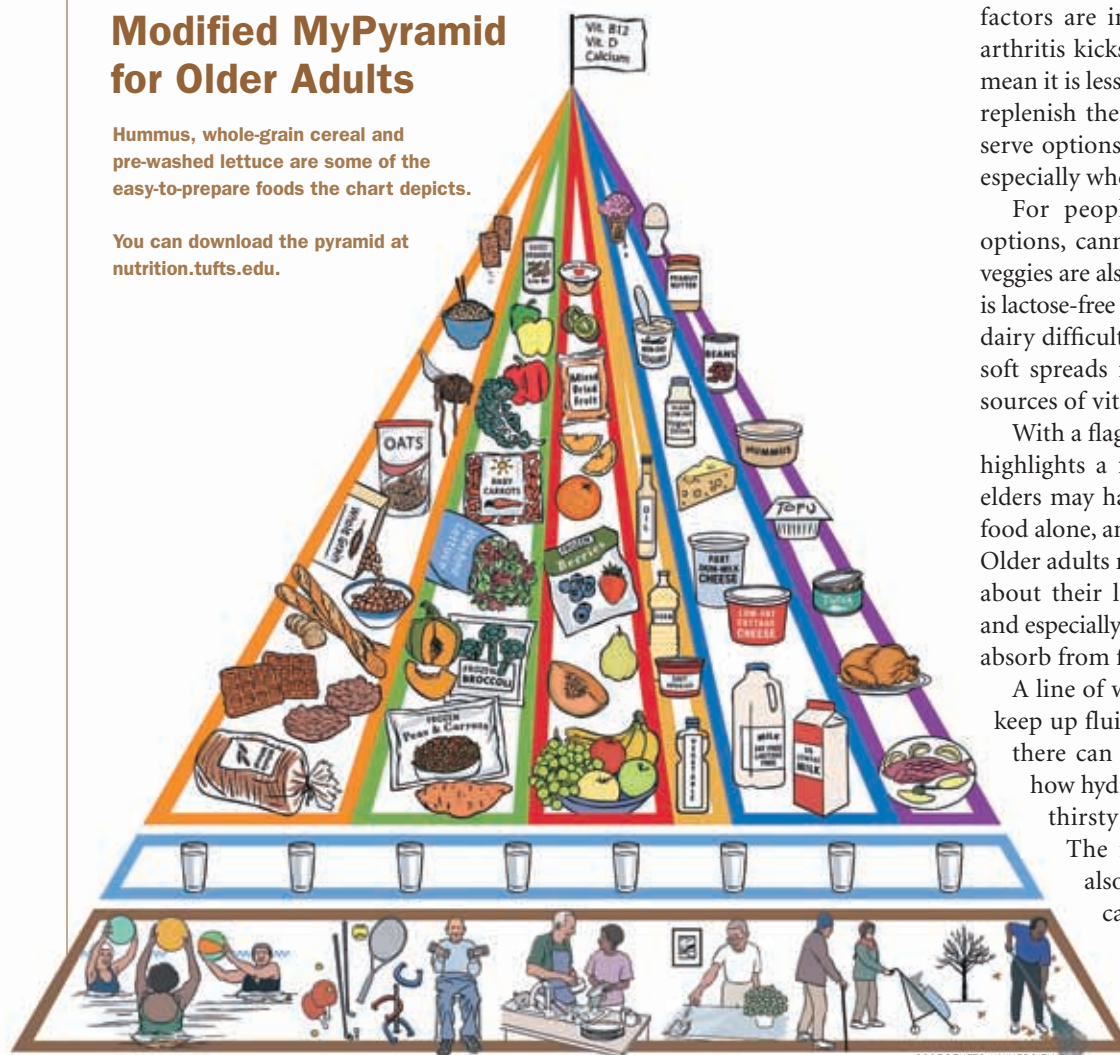
A line of water glasses is a reminder to keep up fluid intake, because “as we age, there can be a disassociation between how hydrated our bodies are and how thirsty we feel,” Lichtenstein says.

The foundation of the pyramid also shows many kinds of physical activities that count as exercise, from weight lifting and tennis to doing housework and taking the grandchildren for a stroll.

Modified MyPyramid for Older Adults

Hummus, whole-grain cereal and pre-washed lettuce are some of the easy-to-prepare foods the chart depicts.

You can download the pyramid at nutrition.tufts.edu.





TART BERRY IS SWEET ON HEART HEALTH

WE'VE HEARD THAT RED WINE IS GOOD FOR heart health, but could it be that a glass of cranberry juice is helpful, too?

A survey of recent research literature by two Tufts scientists found that cranberries have properties that could be important in helping prevent cardiovascular disease, the leading cause of death in the United States. "There is a compelling body of experimental

evidence suggesting a benefit of cranberry phytochemicals on heart health," says Professor Jeffrey Blumberg, Ph.D., a senior scientist in the Antioxidant Research Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging. Phytochemicals are derived from plant sources. "The available human studies in this area are limited, but show some evidence of promise," Blumberg notes.

The survey, conducted with Diane McKay, G89, N97, N00, a scientist in the Antioxidant Lab, appeared in *Nutrition Reviews*.

Cranberry phytochemicals, particularly a subset called flavonoids, have been shown to help prevent urinary tract infections and gastric ulcers, as well as decrease gum disease. Researchers now think the same mechanism confers cardiovascular benefits, and are focusing more studies on this area.

In one of the studies, a group of people who drank low-calorie cranberry juice significantly reduced their LDL cholesterol, the "bad" type, compared to a control group. Another study found that after 12 weeks of consuming increasing amounts of cranberry juice, a group of 14 men had increased concentrations of HDL, the good cholesterol. The studies were small, though, and more testing is needed, Blumberg says.

Cranberry juice cocktail, with 27 percent juice, is the most common way to consume cranberries, and was used in most of the clinical trials. Cranberry juice cocktail is quite tart, of course, and requires sweetening to be palatable for most people; for those counting calories, Blumberg says, the light cranberry juice cocktails with sugar substitutes are a good alternative.

The cartography of hunger

LOOK AT THE BIG PICTURE, THE SAYING GOES. But sometimes, seeing the trees instead of the forest can be just as useful, as Professor Beatrice Rogers, Ph.D., knows.

Rogers and her collaborator, Kathy Macias, N01, F02, made Latin American headlines earlier this year when they presented the results of their studies estimating the prevalence of malnutrition in Ecuador, Panama and the Dominican Republic.

Using a statistical technique called Small Area Estimation, they combined Census data with nutrition surveys to profile not just provinces but the individual municipalities they comprise. They then created a series of maps that illustrate the nutritional differences, sometimes stark, even between adjacent districts.

They demonstrated, for example, that in a country like the Dominican Republic, where malnutrition is relatively low overall, there are still localized areas with high rates of malnutrition, and those areas are not always the most impoverished ones.

"See that one little guy there?" Rogers asks, pointing to a municipality along the coast. Colored purple, it stands out from its



lavender and light-blue neighbors. The darker the color, the bigger the discrepancy between poverty and malnutrition rates, Rogers explains. "It's not in the place where people expect it to be bad."

With the maps, experts can see at a glance how nutrition status correlates—or doesn't—with factors like climate and topography, market infrastructure, availability of social services, distance from major cities, ethnic diversity, income inequality and the distribution of poverty. As Rogers writes, "food security and nutrition are often determined by factors other than a household's income."

Rogers says the maps can be an important tool in the fight against hunger, not only by pointing out the unexpected places where hunger lurks but by helping experts design nutrition interventions geared toward the particular concerns of individual municipalities.

Associate Professor Parke Wilde, Ph.D.; Professor Patrick Webb, Ph.D.; and research assistant James Wirth also worked on the three-country study, which was sponsored by the World Food Programme's regional office for Latin America and the Caribbean.





Out of

Sight

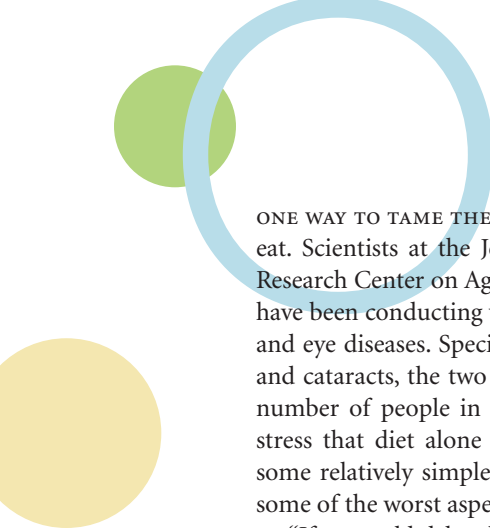


Vision loss is an inevitable part of aging. What you eat could help forestall it.

The signs of vision loss come on slowly and painlessly, in most cases. First, it's hard to see in a dimly lit restaurant. Then words on the page start to blur; colors seem less intense. Eventually, even well-loved faces become shadowy and unfamiliar. It can be frightening and isolating—and it happens more often than most people realize. ■ Almost all of us will deal with some form of eye disease as we age. Cataracts await the vast majority, and while those can usually be remedied through surgery, other sight-threatening conditions are still difficult, or impossible, to control. One in three people over the age of 75, for example, develops age-related macular degeneration (AMD), which has no cure and can lead to blindness. ■ For the 76 million baby boomers, in particular, it's an eye-opening realization—the generation that has relied on contact lenses and Lasik to stave off wearing glasses will find itself facing far more serious eye issues. Not to mention the potential strain on the health-care system, and the associated costs. ■ “Some estimate that by 2020, that magic ‘perfect-vision’ year, macular degeneration will be epidemic, because people are living so much longer and developing the disease,” says Johanna M. Seddon, M.D., director of the Ophthalmic Epidemiology and Genetics Service at the New England Eye Center at Tufts Medical Center and a professor at Tufts School of Medicine.

BY HELENE RAGOVIN

ILLUSTRATION BY MARIA RENDON



ONE WAY TO TAME THE THREAT MAY BE THROUGH WHAT WE eat. Scientists at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts and elsewhere have been conducting work on the connection between diet and eye diseases. Specifically, they've been looking at AMD and cataracts, the two eye conditions that affect the largest number of people in the United States. While researchers stress that diet alone is not a cure, there is promise that some relatively simple dietary changes could help forestall some of the worst aspects of these diseases.

"If we could delay the onset of AMD and cataracts for 10 years, we could eliminate 50 percent of the medical problems" associated with them, says Allen Taylor, Ph.D., head of the Laboratory for Nutrition and Vision at the HNRCA and a professor at the Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy. Taylor's recent work has looked at the connection between the consumption of diets high in simple sugars and the development of AMD and cataracts.

Even for the elderly and those already afflicted with eye disease, "our data is telling us that people can still gain some advantage by modifying their diet even fairly late in life," Taylor says. "But I certainly would be advising my children, and my children's children, to begin a prudent diet."

KEY NUTRIENTS

Blindness and low vision (partial vision loss that cannot be corrected) affect 3.3 million Americans age 40 and over, or one in 28, and are projected to affect 5.5 million by the year 2020, according to the National Eye Institute (NEI).

AMD is the major cause of blindness among white Americans, while glaucoma and cataracts are the leading causes among African Americans and Hispanics, with genetics and health-care disparities accounting for the differences. (No data is available on prevalence of eye disease for Asian Americans or American Indians.)

These diseases strike different parts of the eye. Cataracts are a clouding of the lens. In most cases, the damaged lens can be surgically removed and replaced with an artificial lens. AMD affects the macula, the area at the back of the eye that's responsible for central vision. Glaucoma, an umbrella term for a family of diseases that destroy cells in the optic nerve, erodes peripheral vision. Neither AMD nor glaucoma is curable; vision lost to either cannot be restored completely.

Of these conditions, researchers have been most successful in establishing nutritional ties to AMD. A major NEI project, the Age-Related Eye Disease Study (AREDS), completed in 2001, found that high levels of antioxidants—vitamins C and E and beta-carotene—along with zinc and copper, significantly reduced the risk of advanced AMD and its associated vision loss in at-risk individuals. Other research has shown that two micronutrients

in the carotenoid family, lutein and zeaxanthin, may be particularly useful in protecting the macula.

"When we think about lutein and zeaxanthin, and AMD, it's one of the most compelling nutrition-disease relationships there is," says Elizabeth Johnson, Ph.D., an assistant professor at the Friedman School and a scientist at the HNRCA.

Lutein and zeaxanthin are the yellow pigments found in leafy green vegetables—in greens that have wilted and lost their emerald sheen, the yellow left behind is the lutein and zeaxanthin. Another good source is egg yolk; while eggs don't contain as much lutein and zeaxanthin as green vegetables, what is there is extremely "bioavailable," or easy for the body to extract and use.

Zeaxanthin is also found in corn. (Mexican Americans, whose traditional diet is often based on corn tortillas and other cornmeal products, tend to have high levels of zeaxanthin, for example.) The Asian berry known as goji, *fructus lycii* or wolfberry contains extraordinarily high levels of zeaxanthin and has been used for centuries to promote eye health. Carrots, the food usually touted as being "good for your eyes," contain almost no lutein and zeaxanthin, although they are rich in beta-carotene, which the body converts to vitamin A, a crucial nutrient for vision.

A second NEI study, known as AREDS2, is under way; in addition to the antioxidants examined in the first AREDS, lutein, zeaxanthin and an omega-3 fatty acid have been added to the mix.

SPINACH QUEST

I'll never look at a plate of spinach the same way again.

Spinach and other leafy greens are the main dietary source of lutein, a micronutrient that has been shown to help protect eyes against age-related macular degeneration (AMD), a sight-threatening disease that afflicts many older adults.

"By around age 70, one in six people has some degree of it, and by 80 years, one in three," Elizabeth Johnson, Ph.D., a researcher at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts (HNRCA), tells me. "Yikes," I think, doing some quick arithmetic. Can I consume enough green vegetables over the next 20 to 30 years to remedy a lifetime of lutein neglect?

We head upstairs to the 11th floor of the HNRCA in downtown Boston, where the densitometer awaits. A black metal box with an eye cup protruding from the side, the densitometer is able to measure pigment in the macula, the part of the retina responsible for central vision. The macular pigment is made up of lutein and its companion nutrient, zeaxanthin, both members of the carotenoid

Together, lutein and zeaxanthin make up the macula pigment. Scientists believe the macula pigment acts as a sort of shock absorber—or, in this case, a light absorber—protecting the eye against oxidation and light damage. The denser the macula pigment, the more protection available.

POPEYE WAS RIGHT

Seddon recommends her patients eat a diet rich in lutein and zeaxanthin. In 1994, she published the first systematic evaluation of the dietary content of lutein and zeaxanthin in food and how it related to AMD. “Those results indicated a profound effect, and subsequent studies have shown the same thing,” she says.

Lutein outpaces zeaxanthin in the American food supply by about 5 to 1, so it is the more often discussed member of the pair, Johnson said. The recommended daily intake for both is 6 mg, but most Americans don’t get nearly that much. The most plentiful common source of lutein is spinach—a scant half-cup raw serving is enough to meet the daily recommendation.

“And with lutein, it’s not a case of ‘more is better,’” Johnson says. “If you’re taking mega-supplements, you’re just wasting your money.”

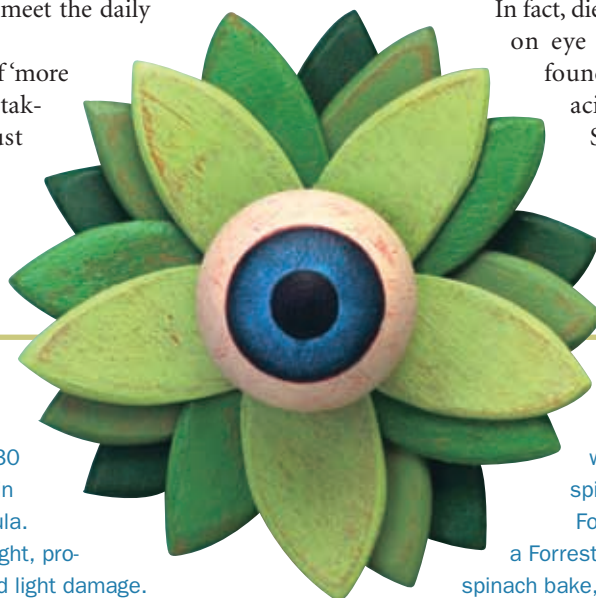
In most cases, the experts say, it’s better to eat lutein-rich foods, which contain other nutrients and

fiber, rather than resort to supplements. The most noteworthy exceptions are heart patients who need blood-thinning medications such as warfarin and are advised to avoid spinach and greens because of possible food-drug interactions, or those prone to kidney disease, because the oxalates in greens may contribute to formation of kidney stones. Johnson advises those looking for an “eye-health” vitamin to check for a lutein content of close to 6 mg per dose; some products contain only minute quantities.

Because of the tough cellular walls of spinach and other greens, they should be cooked a little to get the most nutritional benefit. And, Johnson says, greens should be consumed along with a small amount of a healthful fat to allow absorption of the lutein.

Omega-3 fatty acids may be particularly beneficial. A study by Johnson scheduled to be published in the May issue of the *American Journal of Clinical Nutrition* suggests that DHA, an omega-3 fatty acid, enhances the amount of lutein that can be taken up by the retina.

In fact, dietary fats may have their own effects on eye health. Earlier work by Seddon found that diets high in omega-3 fatty acids were linked to macular health. She also warns that saturated fats and trans fats can increase risk for AMD. “It’s not just about total fat; it’s about the kind of fat you eat,” Seddon says.



family. Of the hundreds of carotenoids in nature, and of about 30 in the body, only lutein and zeaxanthin are able to lodge directly in the macula. There, this yellow pigment absorbs light, protecting the macula from oxidative and light damage.

The process is painless. I look into the machine and watch a flickering, milky blue dot, turning knobs until the flickering ceases. I repeat the process several times over a 15-minute period. As I do this, the machine is calculating the amount of light being absorbed by my macular pigment, and thus how much lutein I have in my eye.

My level is “average.” But I resolve to do better. Can I, in the course of a month (the amount of time I have left to report this article), boost my pigment by eating more lutein-rich foods?

The best sources of lutein are leafy greens—primarily spinach, but also its cousins, chard, kale, beet greens, etc. Lutein is also present in other green vegetables, and in egg yolks. (Goodbye Egg Beaters; hello omelets!) Johnson also informs me that the best way to absorb the lutein in greens is to eat them cooked, with a small amount of “good” fat. (“Not

a glob!” she warns.) In other words, I don’t need to choke down spinach salads with non-fat dressing. For the next four weeks, my diet takes on a Forrest Gumpian quality. I eat spinach pie, spinach bake, spinach squares, spinach quiche, spinach sauté, spinach soufflé. I branch out into chard (yummy with white beans), soups with escarole and lots of other green vegetables that contain lesser, but still decent, levels of lutein. I bring spinach and pasta to the office potluck. I show Johnson a new frozen vegetable combination from Green Giant, called “Vision Health,” containing zucchini, green beans and carrots. “I don’t know if this vegetable selection is the best” for getting lutein, says Johnson, whom I am beginning to think of as the Lutein Queen. “But I’d rather someone eat this than supplements.” I even buy a bag of beet greens, but can’t quite figure out what to do with them.

Then it’s time for my re-test. On the elevator ride up to revisit the densitometer, Johnson reassures me that it takes some people months to increase their pigment levels, and I’ve only been at it for four weeks. But... yes! I’m up about 40 percent, Johnson says.

Anybody want a bag of beet greens?

—Helene Ragovin

A good source for the helpful omega-3s is fatty fish. “Eat a couple of servings of fish per week,” Seddon advises. “The omega-3s might be helpful for AMD and other diseases as well.” Salmon, herring, sardines, mackerel, lake trout and albacore tuna are all high in omega-3s.

THE SUGAR TRAP

In most young people, the center of the eye’s lens is crystal clear. Over a lifetime, however, the lens slowly tints, turning yellow, then amber, then brown. And often, cloudy, opaque spots—cataracts—develop.

For Allen Taylor, this process evoked the image of a sliced apple, turning brown as it sits on a table. Based on his training in biochemistry, he believed the same principle was responsible for both phenomena.

“It all has to do with oxidation—specifically, the oxidation of carbohydrates,” Taylor says. In work that has opened a new direction for vision research, Taylor and his colleagues examined the relationship between intake of foods that are high on the glycemic index (GI)—meaning foods that are rapidly converted to glucose in the body—and the development of AMD and cataracts.

“Simple-sugar intake sets up the body for damage when sugar is oxidized,” Taylor says, adding that the American

diet is now 50 percent higher in simple sugars than it was 30 years ago. The effects are being seen in rising obesity rates. Another probable result, Taylor says, is the prevalence of cataracts.

“If you live long enough, you’ll get a cataract,” he says. While a damaged lens can be replaced, “for people who are frail and elderly, the last thing they need is another procedure, or to have their abilities compromised. And there is a huge cost: cataract surgery is the biggest line-item in the Medicare budget.”

Taylor’s lab looked at high-glycemic index diets in relation to AMD and cataracts, using data from AREDS and other long-term studies. The results showed that those who consumed diets high in simple sugars, as compared to complex carbohydrates, had a higher risk of developing cataracts and AMD. They also developed them at a younger age.

“And more than that,” Taylor says, “in people with lower-GI diets, the disease progressed slower. So you’re protected in two ways—delayed progress and delayed risk.” According to the study, if patients with early stage AMD switched to a low-GI diet, 7.8 percent of advanced cases could be avoided over the next five years.

Taylor is not talking about drastic dietary changes. For people who eat white bread, for example, “by only changing five slices of bread from white to whole-wheat, that would change the GI enough to get into a healthier range,” he says.

“That shows just how subtle, how doable, how achievable this type of dietary management is.”

SEEKING LUTEIN?

Per 100 gram serving.
Aim for about 6,000 micrograms
(6 milligrams) of lutein and
zeaxanthin per day.

Kale (1/2 cup cooked)
Lutein: 15,798 mcg
Zeaxanthin: 16,903 mcg

Turnip Greens (1/2 cup cooked)
Lutein: 8,440 mcg
Zeaxanthin: 9,030 mcg

Spinach (1/2 cup cooked)
Lutein: 7,043 mcg
Zeaxanthin: 7,536 mcg

Spinach (1 cup raw)
Lutein: 11,938 mcg
Zeaxanthin: 6,685 mcg

Broccoli (1/2 cup cooked)
Lutein: 2,226 mcg
Zeaxanthin: 1,736 mcg

Corn (1/2 cup cooked)
Lutein: 1,800 mcg
Zeaxanthin: 1,476 mcg

Lettuce (1 cup romaine)
Lutein: 2,635 mcg
Zeaxanthin: 1,475 mcg

Peas (1/2 cup canned)
Lutein: 1,350 mcg
Zeaxanthin: 1,147 mcg

Brussels Sprouts
(1/2 cup cooked)
Lutein: 1,290 mcg
Zeaxanthin: 1,006 mcg

SOURCE: AMERICAN MACULAR
DEGENERATION FOUNDATION

A FAMILIAR LIST

Doctors and researchers stress there are many other factors besides diet that affect the development and progression of AMD.

“Smoking is a very strong risk factor, stronger than any other, except for genetics,” Seddon says. That includes second-hand smoke.

Age and gender (more women are affected than men) are also risk factors, as are Body Mass Index and waist-to-hip ratio (“apples” are at higher risk than “pears”). High blood pressure and cholesterol levels may play a part as well.

Sound familiar? It should—those are many of the same risk factors for cardiovascular disease.

“If you look up close, on a microvascular level, what you see in the eye is what you see in the heart,” Johnson says. “The nice thing about preventive measures for AMD is that they are consistent with everything we know about preventing heart disease and cancer: high consumption of fruits and vegetables, low-fat, normal body weight, exercise. What’s good is that a lot of modifications can be done.” **TN**

Helene Ragovin is a senior writer in Tufts’ Office of Publications. She can be reached at helene.ragovin@tufts.edu.



buy me, i'm green

BY JULIE FLAHERTY ILLUSTRATION BY BETSY HAYES

TO GET AHEAD IN THE AGE OF GLOBAL WARMING, BUSINESSES HAVE BEEN EAGER TO show consumers their greener sides. For some companies, being earth-friendly and sustainable goes to the core, soaking into the corporate ethos. Other companies donate to a wind farm as window dressing and call it a day. For a view from the private sector, *Tufts Nutrition* talked to three graduates of the Agriculture, Food and Environment Program who have a hand in the greening of business, selling sustainability to both chief executives and consumers. Corporate America may not be ready to run entirely on biodiesel, they say, but it's rolling in the right direction. After all, jobs like theirs didn't even exist a decade ago.



Shauna Sadowski, N05, makes the business case for saving the planet

SOMETIMES GETTING A COMPANY TO DO the right thing by the earth isn't a matter of threats or fines. It's a question of dialects.

"Being able to speak the language is important," says Shauna Sadowski, N05. "Companies have their own language. The field of sustainability is quite different... it's about a triple bottom line, or how you consider the impact on people and communities, the environment, as well as the financial profit."

Whether the discussion turns to leverage ratios or organic farming techniques, Sadowski can converse fluently. A farmer's daughter with a business school degree, she has helped Fortune 500 companies translate environmental wish lists into persuasive business cases. She currently tackles sustainability issues for Clif Bar & Co., a California-based maker of energy bars and nutrition drinks that prides itself on its earth-friendly practices.

Sadowski's area of expertise is Corporate Social Responsibility (CSR). The proposition: that a company should put



some conscious thought into its effects on people and the planet. Doing so can certainly look good to consumers, and help sell more widgets in the short term. But the companies that consider the future, Sadowski says, have done their scenario-based risk analysis. In corporate-speak, it's called "continued supply assurance."

"We cannot continue at the current pace of conventional agriculture," she says. "The amount of pesticides, the amount of soil erosion, just the natural degradation that is taking place with the intensification in agriculture is not sustainable. And it's contributing to the problems of climate change and water scarcity. Companies have to do things regardless of the consumer. I realize some people will always ask, 'If consumers won't buy it, why should we do it?' If you don't start looking long-term at this, you won't have a supply any more, and then you will have nothing to sell."

Another business argument for CSR: It attracts and retains the best employees. "There is more interest in working for a company that's value-driven," she says. "That's changed in the past 20 years." She points to a recent study of MBA students in which 79 percent said they would seek employment that is socially responsible in the course of their careers.

Clif Bar already buys more than 20 million pounds of organic ingredients (nearly 70 percent of its total ingredients) each year. It hired Sadowski to focus on other attributes that contribute to a sustainable food system, like whether its suppliers use renewable energy and are water-efficient, as well as the social side of food production and processing, like community engagement and workers' health and well-being. A supplier code of conduct is also in the works.

"I believe that only by working within our supply chain—connecting the various players together along the way, from farm to final product—will we truly contribute to a more sustainable food system," she says.

Raised on a 500-acre farm in Saskatchewan that her father's father had tilled, Sadowski saw both the pros and cons of working the land. "It was not the idyllic farm life that sometimes is romanticized," she said, noting the financial hardships of running a medium-sized farm. "If you didn't get big, you got pushed out."

Wanting a more lucrative career, she studied business at the University of Pennsylvania's Wharton School, and

spent the next four years as a consultant, advising Fortune 500 companies on best practices in strategic planning. Mergers and acquisitions and portfolio analysis were a far cry from the wheat fields of Canada, but "I liked the analytical thought that went behind it," she says. "The issue may have been, say, outsourcing, but the way that you think about it, the analysis that goes on behind it, can really be taken across any problem. This is when I started going back to the socio-economic side of things. How can I bring in these business skills in a way that can benefit society?"

The problem she wanted to tackle was the food industry. So she enrolled at the Friedman School and began to look at ways for the public and private sectors to work together toward sustainable development. Along with Kristen Rainey, F07, she helped put together a panel on sustainability throughout the supply chain, bringing together farmers, companies and NGOs to talk about how they work to promote social and environmental responsibility in their organizations.

After graduation, she moved to San Francisco and took a job with the nonprofit Business for Social Responsibility, where she helped food and agricultural companies incorporate environmental and social practices.

Her current employer, Clif Bar, is already something of an environmentalist's utopia, a company that not only uses organic ingredients, but buys carbon offsets, uses alternative fuels and provides incentives for employees to walk, bike or carpool to work. It got rid of wasteful shrink wrap and started repairing and reusing its shipping pallets (the second largest use of lumber in America, after home construction). At Clif Bar headquarters, employees recycle and compost passionately, diverting more than 70 percent of office trash from landfills. The company even uses biodiesel-fueled vehicles for its inter-company shipping and marketing fleet and rolls out an RV powered by vegetable oil for events. And yet, with net revenues of \$176 million in 2007, its financial health is also robust.

Sadowski gives credit to the company's progressive founders, who have resisted buy-out offers from larger companies. Staying private allows Clif Bar to make some avant-garde choices, like encouraging customers to mail in their empty energy-bar wrappers so they can be recycled and woven into material used to make new items, such as backpacks and gym bags.

"Public companies are usually driven by short-term returns," she said. "We can look at the long-term perspective and realize if we don't meet the numbers, we won't be punished by the market for that. We have a bit more flexibility. We can be risk-loving."



david in goliath

David Cantor, N03, nudges big chocolate toward sweet sustainability

IN THE SNACK FOOD HEADQUARTERS of Mars North America in Hackettstown, N.J., David Cantor, N03, sits with the other marketing managers. But while his colleagues might spend their days planning promotions for Snickers and M&M's, two of Mars' cornerstone treats, Cantor gets to think about rebuilding biodiversity in Brazil's rainforests and supporting organic farmers in the Dominican Republic.

Cantor works for Seeds of Change, a tiny organic foods division of Mars Inc. He has helped the parent company launch its first organic candy endeavor, a line of premium chocolate bars that wear a certified organic seal and donate 1 percent of net sales to supporting sustainable organic agriculture worldwide.

"Seeds of Change is all about preserving biodiversity and supporting sustainable organic agriculture," Cantor says. "That is our charge. Everything we do ladders up to that mission. It's the reason to be for Seeds of Change. It's what motivates me in the morning."

While Seeds of Change, which also makes organic sauces, dressings and frozen entrees, is a healthy-sized business compared to other organic food companies, in the \$21 billion Mars universe it is a relative Pluto. Cantor is grateful, in a way. His marketing colleagues could easily devote a year to a single advertising campaign for one of the big-name confections. But since joining the team two years ago, Cantor has had his hands in everything, from ensuring there is a customer for a dark chocolate bar flavored with mango, coconut and cashews (his favorite) to making sure it is competitively priced. He has even helped the procurement department locate sources of sustainable ingredients, which can be a challenge if, for example, "we find an ingredient we really want to use and it's a lesser-known heirloom variety of fruit," Cantor says.

Working for the organic arm (or pinkie) of an otherwise-traditional food giant may seem untoward, but it's not uncommon. Seeds of Change began in 1989 as an

organic seed catalogue dedicated to increasing biodiversity in food crops. It later moved into organic food production. Mars purchased it in 1997, adding it to its global portfolio of snack foods, pet foods and Uncle Ben's rice products. The story is an increasingly familiar one; other earth-friendly companies that have found big-budget sponsors include Burt's Bees (purchased by Clorox), Tom's of Maine (now part of Colgate-Palmolive) and The Body Shop (a division of L'Oreal).

Cantor admits there was "a little bit of dissonance" at first in being an environmentalist working at a big food company, especially for someone who spent four years in the 1990s running an organic farm he co-founded in New Mexico. But he didn't just trade in his shovel for a BlackBerry. The transition started in 1999, when he took a job at a start-up delivering organic fruits and vegetables out of New York City.

"I was working out of an unheated warehouse in Brooklyn, from 6 to 6, loading vans and driving around the tri-state area," he says. To his surprise, he liked the energy and the excitement of the business world. "I liked seeing this other side of organics, the experience in sales and customer service. I liked the hustle of it."

The next question was how to bring organics to the masses. Wanting to know more about the intersection between business and agriculture, he applied to the Friedman School. "I knew I was interested in food systems," he says, "although at the time I didn't know what that meant."

After graduation, the first product he marketed wasn't organic, but CocoaVia, a Mars creation, did have a heart-health claim. Cantor had the chance to run its web campaign and later helped sell it to health food stores nationwide. When Seeds of Change was readying to launch its first organic chocolates, Cantor was the natural choice to market the line. The field was already getting crowded, as the organic chocolate market has been growing even faster than organics as a whole. Mars was not the only candy giant who wanted in: Cadbury Schweppes bought Green & Black's organic chocolates in 2005, and Hershey's has owned the organic Dagoba brand since 2006.



How can all these acquisitions further the organic cause? “Seeds of Change gets to leverage Mars’ resources, logistics and expertise,” Cantor says. “All of this helps us introduce a higher-quality organic product to more people.” There is also the hope that some of the acquired company’s pro-earth mentality will rub off on the parent company. The agronomist Howard-Yana Shapiro, a former Seeds of Change vice president, stayed on with Mars after the sale and is now the parent company’s global director of plant science and external research. He is testing ravaged rainforests in Brazil to see if they can be brought back to fruition as farms, which would counteract some of those carbon emissions that are fueling climate change. Cantor says it’s a nice fit for Mars, which has been active in cocoa science and sustainability for decades.

Marketing chocolate is a little different from other organic products, Cantor says. “With chocolate, it’s tricky. It’s all about taste. It’s a selfish pleasure, and it’s personal, and it’s a little moment for you.”

The USDA organic seal on the label, and the delectable product underneath, do a lot of the selling for him. “Our sustainability message, at least on our chocolate, is a little toned down,” he says. “We don’t hit people over the head with, ‘Hey, you’re making the world a better place with our chocolate.’”

But that is the hope.



behind the label

Kristi Wiedemann, N02, cuts through the phony baloney of earth-friendly products

EVER GET THE FEELING THAT THE green-products movement is blowing low-emission smoke in your eyes? Have you noticed that foods labeled “natural” can still share ingredients with a Twinkie, and some hybrid cars get the mileage of a tank? Kristi Wiedemann knows. Her job is to separate the organic wheat from the chaff, culling the truly earth-loving products from the imposters.

As a science and policy analyst and writer for the web site GreenerChoices.org, Wiedemann, N02, has researched fair-trade coffee, earth-friendly cleaners and green build-

ing materials, among other things. She helped launch the site three years ago for the watchdog group Consumers Union, best known for its product-review publication *Consumer Reports*. The original *CR* is obsessed with product price and quality, and so is GreenerChoices, but with extra attention given to energy consumption, water use, toxins and biodegradability.

“There is no such thing as a 100-percent-green product,” Wiedemann says. “So what we try to do is point out aspects of products that are a little bit better, that may save a little bit more energy. That helps consumers save money, because it saves on their energy bills.”

The double meaning of “green” is not lost on her. On a recent assignment to scope out new products at the 2008 International Builders Show, she saw one vendor present its new energy-efficient dishwasher in a mocked-up, super-green kitchen, complete with bamboo countertops. The dishwasher may be fine, but the whole set-up smacked of smoke and mirrors to Wiedemann.

She later blogged: “The challenge will be for us consumers to sift through the hype and avoid throwing away money by trying to buy our way to a cleaner environment. Remember, despite what some marketing mavens want you to believe, you don’t always have to shell out greenbacks to be green.” GreenerChoices, for example, gives its opinion on which organic products are worth paying more for (such as meat, apples and spinach), which are a toss up as far as health benefits (asparagus, kiwi, onions), and which don’t live up to their price tag (seafood, cosmetics).

Wiedemann recently researched the new Green Works cleaning line, which is put out by Clorox. As far as cleaning products go, she concludes it’s a lesser evil, but “it’s not harmless.” Sure, it would be nice if everyone used baking soda and vinegar to clean their countertops, as Wiedemann does, but she understands the desire for convenience.

Her own environmental philosophy is based in practicality. That comes in part from her father, a retired forester for the state of New York, who saw trees as a natural resource that should be wisely managed but still put to use.

“You can be anti-consumption,” Wiedemann says, “or you can acknowledge that we all use products every day.”

Getting the skinny on those products takes some research. “The more information I can find from government and academic studies, the better,” Wiedemann says. She might call a municipality in California, where environmental regulations are usually ahead of the curve. Or consult a toxicology center at the University of Massachusetts. Or simply check the cleaning products aisle at her local Target to see which bottles read “Caution: eye irritant.”

“It’s a bit of a challenge, just because there is so much emotion in environmental issues,” she says. A package decorated with fields of grass may be appealing, but a lot of self-proclaimed earth-friendly products don’t have science to back them up. Label terms like “earth-smart,” “hypoallergenic” and even “non-toxic” are mostly unregulated and essentially meaningless, according to GreenerChoices. The site points out that the Consumer Product Safety Commission’s definition of “acutely toxic” is a substance that would kill an average adult who drank a pint of it. That leaves a lot of wiggle room (how about it takes more than a pint, but less than a quart?) for what could legally be called “non-toxic.”

On the other hand, Wiedemann says, “Instinctually, something may seem like it’s bad, but you may find out the benefits outweigh the risks.” Consider the age-old disposable-vs.-cloth-diaper debate. In areas of the country where water is sparse, disposables can actually be the greener choice; washing cloth diapers can amount to using thousands of gallons of water annually.

Plenty of green products do live up to the hype. When Wiedemann went to Brazil to research the fair-trade coffee business, she saw that the fair-trade label has real meaning. “The farmers were getting a guaranteed price,” she says. “They were able to send their children to school, to buy a storage facility, to band together to build a community.”

Wiedemann started out studying the environment at the University of Vermont and the SUNY College of Environmental Science and Forestry. Then she became interested in health, taking anatomy classes along with her botany classes. That intersection naturally led her to the Friedman School. After graduation, she worked as a freelance consultant for organic cotton companies. She saw the fields in India where the cotton was grown, the factory where it was sewn and printed, and the finished product at her local Whole Foods in New York City.

“I saw the benefits of buying that organic T-shirt and how it went all the way back to those farmers in India,” she says. In both avoiding pesticides and getting higher prices for their products, “it was truly making their lives better.”


Wiedemann has seen her share of “greenwashing,” the term for marketing products as earthy-crunchy when they give little benefit to people or planet. (Free-range eggs, which come with no guarantees the chickens ever step foot outdoors, are the most egregious example in her book.) But she’s optimistic that things are moving in the right direction.

“The environmental movement has been going on for a long time, decades now, and so far, I haven’t seen a lot of momentum,” she says. “But I feel like now there is more, because corporate America is on board. The amount of media that is being generated around green, it’s frankly getting people to think about it. When they pick up a product, they may look a little more closely at it.” **TN**



D

is for

A group of children with backpacks are walking through a field of tall green grass and purple flowers. One child in the foreground is wearing a red and blue striped shirt and a blue backpack. Another child is wearing a pink backpack. The background is a dense line of green trees.

Students visit
Drumlin Farm

School gardens are springing up like daffodils.
But will growing things really make children enjoy science,
respect the earth and occasionally
eat their veggies?

Dirt

BY JULIE FLAHERTY PHOTOS BY MELODY KO

STANDING IN FRONT OF THE CHALKBOARD, GRETCHEN MILLER, N08, sets the ground rules: Don't step on them. Don't squeeze them. Don't cut them in half. Keep screaming down to a minimum. ■ Then Simca Horwitz, N08, dumps a fresh pile of dirt on each cluster of desks. The earthworms have arrived.

Disgusted and enthralled, engrossed by the grossness, the third-graders are on their feet, reaching toward the soil, wriggling as much as the worms to get a good view.

■ "Let's see if we can find some eggs," Horwitz says, and the 21 students in Janice Chin's class start gently picking apart the soil, tea bags and coffee grounds, looking for the miniscule worm progeny. Ooh, they say. And *Eww*.

This lesson on decomposition is part of a partnership between the Friedman School and its neighbor, the Josiah Quincy Elementary School. Throughout the school year, all the students in the Agriculture, Food and Environment (AFE) Program arm themselves with songs about roots, stems and leaves and reports from the fictitious *Topsoil Times* and bring lessons on gardening to the 125 third-graders in the school in Boston's Chinatown neighborhood.

Garden-based learning, as it is called, is a hot topic in education circles across the country. Already, the National Gardening Association's web directory lists thousands of school and community gardens where young people can get their hands in the soil. The enthusiasm is such that in 2006, the California legislature appropriated \$15 million to support legislation aimed at putting a "garden in every school." Congress even debated last year whether to create a grant program that would pilot "garden-to-kitchen" programs in schools nationwide.

When students grow things with their own hands, the theory goes, they are more likely to have a positive ecological outlook, an appreciation for where food comes from, and maybe even a fondness for healthy foods like fruits and vegetables.

But there is a surprising lack of research to back up those intuitions. "There have been just a handful of studies," says Kathleen Merrigan, Ph.D., director of the AFE program and the creator of the Quincy School partnership. "Considering we now have several thousand schools with not just gardens, but gardens they are trying to connect to an educational purpose, there's a lot of work yet to do."

SEEDS OF RESEARCH

Students and faculty at the Friedman School are looking to fill the knowledge gap with scientific investigation while helping schools like Quincy develop their gardening curriculums. Their research will build on the work of Michelle Markesteyn Ratcliffe, Ph.D., N07, who devoted her dissertation to studying school gardens in California. In a pioneering study, she looked at whether sixth graders who got their hands dirty got better grades in science, became more environmentally aware, or became healthier eaters, and she found some positive relationships.

Ratcliffe says schools need to take a holistic approach to incorporating nutrition and environmental education into the curriculum. Just as you can't start serving mustard greens at lunch and expect kids to like it, you

can't sow some seeds next to the playground and expect miracles.

"It's a piece-by-piece, larger-systems approach," she says, supported by "positive, engaging experiences around food in the classroom, the garden, the cafeteria and the community."

Ratcliffe creates those experiences as the farm-to-school manager for the West Coast conservation organization Ecotrust and as Western lead for the National Farm to School Network. She enjoys watching the surge of school gardens. "When I started the Ph.D. program in 1999, one of my colleagues told me school gardening was not a legitimate field of study," Ratcliffe says. "Ten years ago, it probably wasn't."

And yet school gardens have a long history in the United States. During World War I, children were called upon to "enlist" in the United States School Garden Army and grow their own food, freeing up crops for troops. This federally funded program sought to make agricultural education a formal part of the public schools, and some say it represented one of the first attempts to nationalize a curriculum of any kind in the United States. In 1916, more than one million students took part. The effort was echoed in the proliferation of Victory Gardens during World War II, the time in American history when fruit and vegetable consumption was at an all-time high.

Maria Montessori, the founder of the Montessori Method, was one of many educators who were early champions of school gardens. "When [the student] knows that the life of the plants that have been sown depends upon his care in watering them," she wrote, "the child becomes vigilant, as one who is beginning to feel a mission in life."

Many current AFE students have faith in garden-based learning, including Abigail Randall, N09, who started a "green-thumb club" for emotionally troubled adolescent girls at a residential facility in Arlington, Mass, where she worked. "For a lot of them, spending 20 minutes weeding outside in the garden could turn their day around," she says.

Before coming to the Friedman School, Gretchen Miller, N08, worked at a third grade in Portland, Ore., where she helped create an after-school club that centered on an organic gardening plot. "I was astounded at how much kids didn't understand about where





With the help of some squirmy friends, Gretchen Miller, N08, left, and Simca Horwitz, N08, below, teach third-graders at the Josiah Quincy Elementary School about the role worms play in decomposition. Opposite page, a flower growing in the fields at Drumlin Farm.

When students grow things in a school garden, the theory goes, they are more likely to have a positive ecological outlook and an appreciation for where food comes from.

their food was coming from,” she says. The children were turned off by the tomatoes and potatoes she pulled from the garden, until she explained they could be turned into ketchup and French fries. “What about broccoli,” one asked. “Can we make French fries from broccoli, too?”

Maura Beaufait, N09, has a particular interest in the social benefits of gardening. She helped run a gardening program for teenagers in Poughkeepsie, N.Y., where the participants were paid to tend and sell produce from the garden. The garden is a very visible part of the neighborhood, which gives the teens a feeling of status within the community. “That serves some of the same purpose that teens are looking for when they join a gang,” Beaufait says. “You want to belong? Here’s a way to do that constructively.”

The students not only changed the way they ate, but brought vegetables home to their families, and used the income from their gardening work to influence the family grocery shopping. “We talk a lot about voting with your dollar and the power of your economic choices to really make



changes in the system,” Beaufait says.

In her experience, a garden provides an escape from the structured learning of the classroom. “As soon as you leave that space, you open up for so much critical thought to happen,” she says. “It kind of equalizes the playing field, and everyone has something to learn and something to teach, and you’re just side by side, learning.”

SOME LITTLE PLOT OF LAND

The Quincy School partnership began in 2006, when Merrigan, on the lookout for ways her city-bound AFE students could satisfy their need to connect with the soil, heard that the Quincy School had a rooftop garden. It turned out that Lai Lai Sheung, a third-grade teacher, had created a container garden for her class on top of the city building.





On their field trip to the farm, Quincy School students watched animals, opposite, and helped harvest pumpkins, left. Back in the classroom, worms, below, were the guests of honor.



Some children simply learn better when they use their hands. That could mean clutching at a tangle of worms, or picking pumpkins at Drumlin Farm in Lincoln, Mass., as part of a field trip.

To lend a hand, the AFE students began by doing a literature review of all the school garden curricula from across the country. With funding from the Tisch College of Citizenship and Public Service at Tufts, where Merrigan is a fellow, they purchased the best books and lesson plans they could find and created two resource libraries, one for Tufts and one for the Quincy School. Then the Tufts students began teaching guest classes about plant parts, the life cycle and decomposition.

Jennifer Obadia, a doctoral student, Friedman Fellow and the project manager for the partnership, points out that “some children simply learn better when they use their hands.” That could mean clutching at a tangle of worms, or picking pumpkins at Drumlin Farm in Lincoln, Mass., as part of a field trip. With funding from Tisch College, Obadia and the other AFE students planned and

chaperoned the excursion, which brought all the third graders out of the city for a day.

Meanwhile, Obadia is on the advisory panel for a Boston Natural Areas Network program that received a grant to help put gardens in the Boston Public Schools. She is working with three schools, whose teachers “run the gamut from expert gardeners to ‘I know this would be good for my kids but I have no idea what to do,’” Obadia says.

One attraction of school gardens is that they don’t cost much money, Merrigan says. “Most schools have some little plot of land; Lai Lai is doing it with cement planters; GrowLabs [indoor light gardens] are not that expensive. So it’s really about time and how gardens can facilitate what teachers are already trying to achieve.” With so many requirements already, teachers don’t want to take on extra challenges. “It can’t be an add-on,” Merrigan says.

To that end, the AFE students wove their

lessons into the existing science curriculum goals. Ultimately, the AFE program students and faculty hope to design a curriculum guide geared to the needs of teachers in Massachusetts, where the school year is woefully misaligned with the growing season.

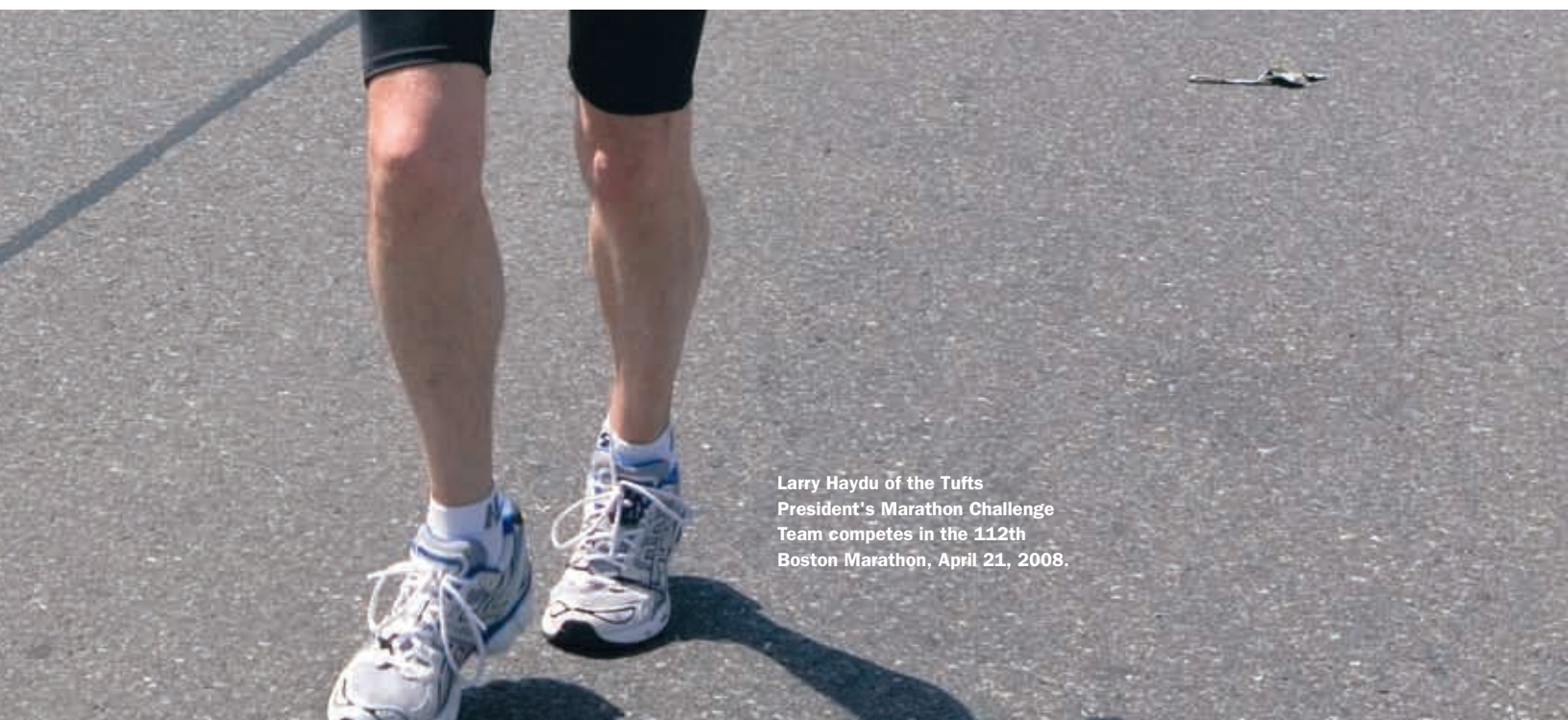
“We want to think in innovative ways about how you make a garden-based learning intervention in the deep freeze of February,” Merrigan says. “How do you keep this going the academic year long?”

A combination of indoor and outdoor programs can help. During the winter, the AFE students started pea plants in the Quincy School classrooms that the children then cared for at home. In the spring, they moved the seedlings to the garden.

A visit from writhing invertebrates is another answer. “There was nothing more exciting for kids,” Merrigan says, “than to have those earthworms to uncover in the dirt.” **TN**



BEYOND THE



Larry Haydu of the Tufts
President's Marathon Challenge
Team competes in the 112th
Boston Marathon, April 21, 2008.



T

WO YEARS AGO, A GROUP OF ALMOST-SEDENTARY adults spent 10 arduous months training through rain, cold, aches and pains to run the Boston Marathon with a documentary crew in tow. They learned how to choose the right shoes, stick to a training schedule and push their bodies to the limit. But they say the real changes they underwent were as much mental as they were physical—perhaps more so.

The challenge started with Tufts President Lawrence S. Bacow, who each year invites others in the Tufts community to join him in running the Boston Marathon to raise funds for nutrition and medical research at Tufts. The PBS program NOVA got involved by asking 13 people who were not necessarily runners—or even in especially good shape—to train to run the 2007 marathon. Donald Megerle, director of the President's Marathon Challenge at Tufts, guided the aspiring runners with the help of marathon-winner Uta Pippig and Miriam Nelson, Ph.D., N85, N87, an associate professor at the Friedman School. All but one of the novice runners finished the training and completed the marathon, and NOVA broadcast a show about their experience.

A year later, some have kept up their training, and two even

trip to Europe led by Miriam Nelson (challenging her fear of heights), and dining by herself at the Four Seasons.

Jane Viener, who at 59 was the oldest runner in the group, says the training was grueling, like the Sunday she took to her bed after running 10 miles. At the same time, she says it was an extraordinary experience. “You have to be convinced you can do it. If you follow the training, your body is really ready to do it, but nobody feels good doing it; it hurts. It’s not a natural thing to do. But you know you’re going to finish because, god damn it, you’ve trained for 10 months.”

Lawrence Haydu, 57, joined the Tufts challenge for his health. After suffering a heart attack in his early 40s, he made only sporadic efforts at exercising until his daughter urged him to do more. He is still not crazy about exercise, but he trained with Tufts again for the 2008 marathon, a powerful example of mind over body. “It’s certainly true for me that doing this with other people is what makes this work,” he says. “It’s hard to get up at 5 a.m. when it’s cold and snowy outside. Knowing there’s a group, knowing there are people counting on you to be there, changes things.”

Haydu ran this year’s marathon in just under 5 hours and 34 minutes, cutting a whopping 42 minutes off his 2007

FINISH LINE

A year after their first marathon, these novice runners still feel like winners

ran the 2008 Boston Marathon. Whether or not the physical benefits stay with them, they say there were other, surprising rewards they will always savor.

“Preparing for a marathon, the advice is translational, and you can apply it to any aspect of your life,” says Betsy Powers, 43, a former hospital administrator. “Don’t worry about anything more than 10 feet in front of you; help your teammates whenever you are able to; don’t get too far ahead of yourself. It all comes down to consistency. If you show up every week, and you’re prepared to put the time in, you will be successful.”

Powers even changed jobs because of the marathon challenge. She left a position she held for 22 years to work for a health-care company headed by Jonathan Bush, another marathon trainee. The two became friends and emailed each other occasionally with this message: What are you doing to step outside of your comfort zone?

For Powers, that has meant running other races, a hiking

time, even though he suffered through much of the run with painful leg cramps. Thankfully, he got smart and scheduled a massage for the day after the marathon this year.

Will he run again in 2009? “It’s too early to say if I would do it again,” he says. “Yesterday I said, ‘Absolutely not—what am I, nuts?’ Today I started thinking about things I could do differently. So yes, it’s a possibility.”

He’s pleased that, according to the scientific markers, he’s a lot fitter than when he began the whole process. Still, he admits that he doesn’t feel all that different physically. “Mentally I do, though,” he says, thinking of the years he watched the marathon from the sidelines, never even thinking of joining the crowd of runners. “I guess I learned I could do something that at the outset seemed impossible.” **TN**

You can watch the NOVA documentary and learn more about all the runners at <http://www.pbs.org/wgbh/nova/marathon>.



David Barker

In life's preamble, an epilogue of illness

David Barker posits the fetal origins of adult chronic disease

IN 1989, A BRITISH PHYSICIAN AND RESEARCHER NAMED DAVID BARKER, M.D., Ph.D., posed this question: What if our risk for chronic disease lies in part with our mothers—not in their genes, but in their diets?

The question arose when he and his colleagues discovered a relationship between low birth weight and increased lifetime risk of coronary heart disease. Now known as the Barker Hypothesis, Barker's work demonstrates the profound impact of mothers' nutritional status on the next generation. Subsequent studies have found associations between low birth weight and increased risk of hypertension, stroke and type 2 diabetes.

Barker, a professor of clinical epidemiology at the University of Southampton in the United Kingdom, discussed his research as the keynote speaker for the second annual Friedman School Symposium. He was one of 20 presenters from the U.K., the United States, France, Italy and the Netherlands who gathered in Boston last October to speak on the symposium's theme, "What you eat, what you do, who you are."

Barker's presentation on the fetal origins of adult chronic disease was webcast around the world by the United Nations University.

"I met Barker in the early days when there was still skepticism about the underlying science," Dean Eileen Kennedy, D.Sc., said in her introductory



Parke Wilde

remarks. "It's because of his tenacity that we know what we know today—that nutrition today matters tomorrow."

Once a rare condition, cardiovascular disease (CVD) is now the most common cause of death in the world. Because CVD has been associated with diets high in fat, sugar and red meat, researchers tend to assume heart disease is a side effect of the affluent Western lifestyle. Yet in wealthy nations like the United States and United Kingdom, it's the poorest members of society who suffer most from CVD and, Barker notes, no aspect of their lifestyle can explain the disparity.

But Barker has found in study after study that lower birth weight in full-term babies is linked to higher risk of CVD later in life. Barker doesn't believe it's a genetic vulnerability, but rather one caused by poor fetal and neonatal nutrition. "At conception, all

Lower birth weight is linked to higher risk of cardiovascular disease later in life.

we get is a very general recipe for making a human being," Barker said. "The ingredients come from our mothers."

Even as the egg is on its way to the womb, the baby-to-be is allocating limited resources. Whether nutrients go to the placenta or the body is an important "decision" made in response to the nutrition of the mother,

Barker said. Moreover, a human baby trying to protect its brain will give up muscle mass, which in turn has an impact on the child's insulin resistance. In this way, Barker said, these babies who are born small become more vulnerable to obesity, CVD and a host of other chronic diseases. "The fix for chronic disease then," Barker concluded, lies in improving the nutrition of young women, not the "diets of middle-aged people."

After Barker's presentation, Mark Cobain, Ph.D., of Unilever discussed corporate roles and challenges in nutrition behavior. Parke Wilde, Ph.D., director of the Friedman School's Food Policy and Applied Nutrition Program, gave an overview of the impact of industry on nutrition.

On the second day of the three-day conference, Simin Meydani, D.V.M., Ph.D., spoke on nutrition, immune function and aging, and Richard Guerrant, M.D., of the Center for Global Health at the University of Virginia, presented on malnutrition as an infectious disease. Guerrant studies the impact of enteric infectious disease in places such as the Congo, Bangladesh and Brazil. Diarrhea is perhaps the world's biggest health problem, causing 5,000 deaths each day. But Guerrant and his colleagues are just beginning to document the toll the disease takes on the children who live through it.

The problem is that the bugs that cause diarrhea ravage the lining of the gut, often permanently diminishing its capacity to absorb nutrients. On average, early childhood diarrhea robs a child of 8 centimeters of growth, 10 IQ points and 12 months of schooling. "We have to think out of the box and do something to break this diarrhea-malnutrition cycle," said Guerrant, who has found certain nutrients, including arginine and glutamine, can lessen the impact of enteric diseases. "My dream is to engineer a banana containing alanine, glutamine and zinc," he said.

To close the symposium, Betsey Kuhn, Ph.D., director of food economics at the USDA, gave a brief overview of the future of the farm bill. One component, the food stamp program, is working to increase produce consumption and decrease obesity rates among its beneficiaries.

—Jacqueline Mitchell

RUSSELL TO STEP DOWN AS HNRCA DIRECTOR

ROBERT M. RUSSELL, M.D., DIRECTOR OF THE JEAN MAYER USDA HUMAN NUTRITION RESEARCH Center on Aging (HNRCA) and a professor at the Friedman School and the School of Medicine, is stepping down from the directorship at the end of this academic year after more than 25 years of service to the HNRCA and the university.

"He has been an outstanding leader of the HNRCA, a force for advancing nutrition around the country and around the world, and a lauded researcher in his own field of nutrition science," said Provost Jamshed Bharucha, Ph.D.

As director of the HNRCA for the last seven years and associate director for the preceding 18, Russell oversaw the establishment of new research laboratories during a critical period, when the role of nutrition in the prevention of chronic disease was beginning.



Robert M. Russell will work on science policy issues with the NIH

At the HNRCA's 30th Anniversary Celebration & Symposium last fall, Russell highlighted some of the many ways the center has influenced public policy and medical practice. Under his leadership, for example, research findings from the HNRCA provided the underpinnings for changes to the Recommended Dietary Reference Intakes (DRIs) and the Dietary Guidelines for Americans.

"A lot of the work from which the new DRIs are derived comes from this center," said Russell, who also chaired the panel of the Food and Nutrition Board that was responsible for setting Recommended Daily Allowances for micronutrients.

Russell looked ahead to the issues the center will explore in the next 30 years, including alternative nutritional therapies, the role of biotechnology in genetically modified foods and new roles for familiar nutrients.

"Who would have thought 30 years ago that vitamin D would have a role in cancer prevention or in diabetes?" he asked. "Or that vitamin K might have a role in prevention of osteoarthritis?"

Russell has worked to improve the world's knowledge of nutrition, leading not only national committees in the United States but also international nutrition programs in Vietnam, Iran, Iraq, Guatemala, China and the Philippines. He is a distinguished scientist in the field of retinoids and carotenoids and the author of hundreds of academic papers. He has been president of the American Society of Clinical Nutrition and chair of the U.S. National Committee to the International Union of Nutritional Scientists. He also served on scientific advisory boards for the Food and Drug Administration, NIH, the World Health Organization and UNICEF. He is the editor of *Nutrition Reviews* and co-editor of the text *Present Knowledge in Nutrition*.

During his HNRCA directorship, Russell was made a fellow of the American Society of Nutrition, and received other honors, including the DSM-Roche Award for his research in retinoids and carotenoids, and most recently the Kritchevsky Award for his outstanding career in nutrition science and service. Russell will work with the NIH next year on science policy issues.

William Lockeretz gets a thrill out of debunking dogma by Julie Flaherty

Oh yeah? Says who?

PROFESSOR WILLIAM LOCKERETZ LIKES A LITTLE BIT OF IRONY. TAKE HIS Monsanto coffee mug, a gift from a former assistant. He'll casually bring it with him to the first day of class, and see if his fiercely pro-organic students notice he is brandishing the logo of a multinational producer of pesticides, genetically engineered seeds and bovine growth hormone.

After 27 years at the Friedman School, the retiring co-founder of the Agriculture, Food and Environment Program hasn't lost his sense of humor. His idealism is largely intact, too.

"I have much the same motivations as my students," says Lockeretz, who received the Alumni Association's Faculty Award this spring, "except I present it in a more quasi-impartial, academic way."

Or as Corey O'Hara, N08, F08, puts it: "He's always a scientist and doesn't take anything for granted," whether it's the assertion that all locally grown food is superlative or the stereotyping of farm subsidies. "It definitely gives you a better, more nuanced understanding about what's really going on out there."

Most students come into Lockeretz's class with strong organic credentials; he teaches them about mainstream agriculture.

"If you want to change the system, you have to understand the system," he says. Once they know that, they can talk about how things might be done better.

It was his concern for the environment that pulled this Bronx native away from his first love—physics—which he pursued for 13 years at the City College of New York and Harvard University. But just before he claimed his Ph.D. in 1972, he was caught up in the wave of environmentalism that had swept through the country. Air and water pollution—now those were problems that needed solving.

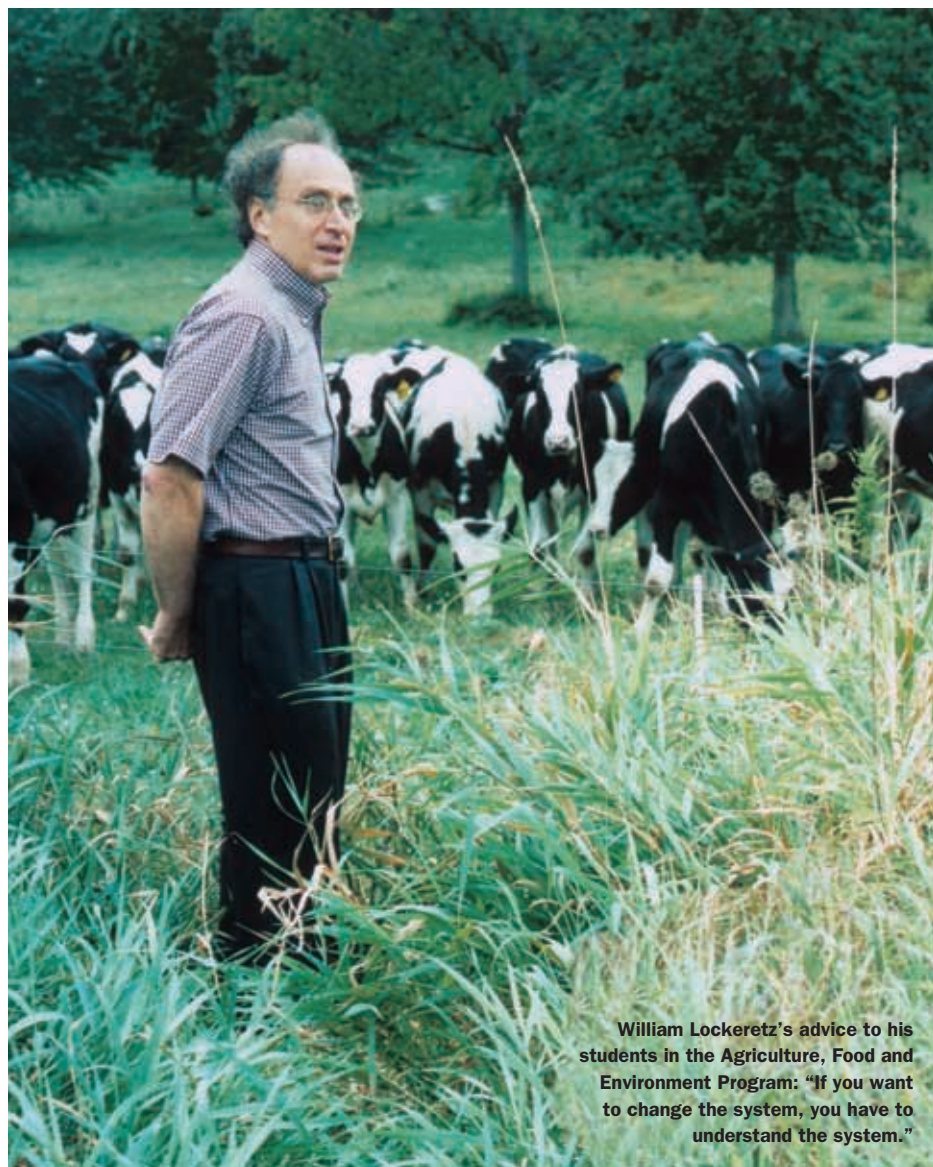
He spent a couple years at Washington University in St. Louis investigating mercury and lead contaminants. Then a position opened up on an agriculture study, and he signed on. "I was kind of awestruck by the possibility of heading a project on a subject I knew nothing about," he says. "But I think I was a quick learner."

It was the time of the oil embargo, and energy consumption was at the front of people's minds. "Fertilizers and pesticides are among the major consumers of energy in American agriculture," Lockeretz says. "So we looked at organic farming as an energy-saving alternative."

But that first agriculture study had much broader implications. It would turn the conventional wisdom about organic farms—that they were unproductive, expensive and commercially unviable—on its ear.

"People knew all about it, without there being any research," he deadpans. His investigation, the first of its kind, found that organic farmers could be successful. "The yield was somewhat lower, but the production costs were substantially lower, so you came out OK."

Although he has researched everything



William Lockeretz's advice to his students in the Agriculture, Food and Environment Program: "If you want to change the system, you have to understand the system."

from soil conservation to animal health and welfare, he is only really satisfied when he is challenging dogma. He did so in the late 1980s, when he surveyed farmers in metropolitan areas about their prospects. While most experts expected a story of doom and gloom, he found that farmers who took advantage of city amenities like cultural attractions and shopping, and who sold their produce at farmers' markets, were optimistic. "Again, I contradicted the prevailing view," Lockeretz says.

In 1981, he received a grant to analyze the economics of using soybean oil for fuel and looked around for a university that would host him during his research. Stanley Gershoff, now dean emeritus of the Friedman School, was the most enthusiastic academic he met with. "He saw the connection between what I was going to do and the broader mission of the nutrition school," Lockeretz says.

After 12 years as a researcher, Lockeretz and his colleague, Molly Anderson, put together a proposal for a unique program of study that would connect three areas related to nutrition. Virginia Berman, N96, was among the nine students in that first Agriculture, Food and Environment class that met in 1994.

"Willie gave us the rare gift true teachers provide—knowledge and passion to spark in each of us the desire to be part of the solution," she says.

Lockeretz can, she explains, enchant students with diagrams of bovine digestive systems and engage them with USDA agricultural data. "Statistics in his class became living people with stories," she says. She vividly remembers his multimedia presentation on the Depression and the 1930s' Dust Bowl, which has since become a hallmark of his class. In addition to the farming facts, he pulled together photographs, folk music, literature and plays created under the Works Progress Administration.

"It was primarily work relief for artists, but the people who headed these projects were visionaries," Lockeretz says. "They wanted to do valuable things that people would learn from." The USDA was just as ingenious, creating agencies such as the Soil Conservation Service and the Rural Electric

GOING THE DISTANCE

Ausman named to chair in international nutrition

IN HER INAUGURAL LECTURE AS THE SAQR BIN MOHAMMED AL QASIMI PROFESSOR IN INTERNATIONAL Nutrition, Lynne Ausman, D.Sc., gave an overview of her illustrious career so far, which has been a seamless blend of research, teaching and administration.

"Helping students succeed is just about as rewarding as doing my own thing," she concluded, even if you don't get the same academic credit when people are ticking off papers. The ovation she received showed she gets plenty of credit for the work she has done creating the master's degree in nutrition via distance learn-

ing, a collaboration of the Friedman School and the government of Ras Al Khaimah

(RAK) in the United Arab Emirates.

The program, announced in April, will be taught in a hybrid method of combined residency periods complemented by online instruction. Building on the Friedman School's emphasis on both science and policy, the degree adds a new focus on nutrition and public health issues and challenges in the Gulf, Middle East, North Africa and South Asia.

The endowed professorship and master's program highlight the growing relationship between the Friedman School and RAK, which are also developing short courses for physicians and allied health professionals in RAK as well as creating a health and wellness center there.



Lynne Ausman

fication Administration. "It was the most creative period in agricultural policy-making in our history," he says.

When not teaching, Lockeretz sings tenor with the Yiddish Community Chorus of the Workmen's Circle. "I'm pretty proud of that because I think we're pretty good," he says. His music and teaching skills are reflected in his sons: David, a jazz musician, and Benjamin, a high school math teacher. His wife of 41 years, the writer Sarah Wernick, had her own Friedman School connection, having collaborated with Professor Miriam Nelson, N85, N87, on the first three books in the best-selling *Strong Women* series. She died of cancer in November.

In some ways, farming practices have improved in the last 35 years, particularly

when it comes to pesticides and soil erosion. But factory farms have become the dominant mode for livestock, "and I think that's a very bad development," Lockeretz says. Agricultural industrialization will continue, he predicts, while the organic movement will gain more footing.

"The alternatives will become more prominent," he says, "but will always be an alternative."

As his final semester winds down, you can find him choosing the menu for his retirement party. A group of friends, colleagues and former and current students will be joining him in Italy this summer for, appropriately, a "slow food" feast of locally grown and lovingly prepared regional dishes. Bon voyage, Professor.

A legacy of innovation

Tufts receives \$136 million, the largest gift in university history, from charitable trust established by alumnus

AN ACT OF PHILANTHROPY BY BOSTON TECHNOLOGY PIONEER AND TUFTS alumnus Frank C. Doble more than 40 years ago has resulted in a gift of \$136 million, the largest in Tufts' history. Doble's generosity will allow the university to begin development of an interdisciplinary laboratory that will advance research and collaboration in biology and engineering, while also supporting financial aid, faculty and other critical needs.

Doble, who earned a degree in electrical engineering from Tufts in 1911 and founded Doble Engineering Co. in 1920, died in 1969. His legacy included generous trusts that will now yield approximately \$272 million, divided equally between Tufts and Lesley University, where he served as a trustee for two decades.

"Frank Doble was a true innovator who foresaw the potential of the electric power industry when it was still in its infancy. The technologies that he developed made the industry safer and more productive," said Tufts President Lawrence S. Bacow. "In founding Doble Engineering, Frank Doble pushed the boundaries of science and technology, just as our faculty and students do today. We are grateful that his legacy will help future generations to attend Tufts and enable us to create a new laboratory, named in his honor, to advance collaboration among our biologists and engineers."

The new integrated laboratory, planned for Tufts-owned property on Boston Avenue in Medford, will allow scientists from the School of Engineering and the biology department in the School of Arts and Sciences to pursue cooperative research.

"New laboratories are needed in order to recruit the best faculty and enable them to thrive at Tufts as teachers and scholars," Provost and Senior Vice President Jamshed Bharucha said. Tufts has not constructed

a new laboratory building on the Medford/Somerville campus in almost 20 years. "A new facility will also provide expanded opportunities for our students to get involved in research," Bharucha said.

Putting biologists and engineers in the same building will also spark multidisciplinary collaboration. "The pace of development today is so rapid that inquiry should not be limited by department and school boundaries," said Bharucha.

Doble Engineering Co.'s high-end diagnostic test solutions for the electric utility industry were designed to enhance the safety and reliability of power systems. Currently based in Watertown, Mass., the company leased its former Medford, Mass., headquarters from Tufts from 1925 to 1947, and Doble and his enterprise were closely connected with the university for many years.

Doble was born in South Paris, Maine, in 1886, as the age of electricity was dawning. Westinghouse Electric Co. was founded in the same year, and General Electric emerged six years later. He entered Tufts in 1907 and financed his education by installing a new telephone system at the college.

Doble regularly invited Tufts engineering students to tour his plant and sought out Tufts graduates for his company. Tufts Professor Amos L. Dolbear, inventor of the condenser microphone; Alvin Howell, chair of Tufts' electrical engineering department; and Tufts Presidents Leonard Mead and Nils Y. Wessell were among those with whom Doble and his company maintained close relationships. A staunch supporter of education, Doble also developed close ties with Lesley University and its founder, Edith Lesley Wolfard.

In addition to engineering and education, Doble's passions included the works of William Shakespeare. In 1962, Tufts awarded Doble an honorary doctor of science degree.

Doble died on December 30, 1969. He had named Tufts and Lesley in his estate plans in 1960. The two universities were the primary beneficiaries of two irrevocable trusts that together owned 87 percent of Doble Engineering. In November 2007, ESCO Technologies of St. Louis purchased Doble Engineering. The trusts have been dissolved and the assets distributed.



Frank C. Doble tests his invention, the Doble Safety Portable Telephone system, circa 1920.

The new loan assistance program is “great for people who want to work in the nonprofit sector but are concerned about having to pay off their loans,” says Madeleine Buras, A10.



In the public interest

Loan repayment assistance program helps alums who help others
by Marjorie Howard

TUFTS UNDERGRADUATE MADEleine Buras says the idea of returning to her native New Orleans after graduation to help people affected by Hurricane Katrina is appealing. But she'll have student loans to pay off and, until recently, didn't think she could consider a public service job because the salary would be too low.

Now, thanks to a program believed to be the first of its kind in the country, Buras may be able to pursue her dream. Tufts has created a new initiative that will help all undergraduates, graduate students and those with professional degrees to pay off their loans if they work in public service or at a nonprofit after graduation.

The Tufts Loan Repayment Assistance Program, known as LRAP, is aimed at encouraging Tufts alumni to pursue careers

that may not necessarily be lucrative but will serve the public good. Graduates in fields such as teaching, health care in regions lacking medical resources and social work would be eligible.

“Every student who graduates with a loan worries about how to pay it off,” says Tufts President Lawrence S. Bacow. “We would like alumni to be able to pursue their passions—to do what they really want to do—without being unduly focused on the need to retire a student loan. It is especially appropriate for Tufts to make this commitment, since as an institution we seek to encourage a spirit of public service in our students.”

For Buras, whose family home was flooded by more than four feet of water and is still unlivable, the new program could offer a chance to work at a nonprofit in her community.

“I think it's a beneficial program because a lot of times students are deterred from doing jobs they want to do,” she says. “A lot of people don't have parents who are able to help them. This gives me a lot more choices.”

The number of awards will depend on the overall number of applicants and the funding that is available, as well as an individual's income and level of indebtedness. The program is being funded annually with \$500,000 from the Omidyar-Tufts Microfinance Fund, which was established with a \$100 million gift from Pierre Omidyar, A88, the founder of eBay, and his wife, Pamela Omidyar, J89.

Alumni must apply by September 1, 2008, and award recipients will be notified by December 1, 2008. Applicants will need to reapply each year for assistance. Application materials and other information about the program is available at <http://activecitizen.tufts.edu/LRAP>. Alumni must currently be repaying education loans or be in a grace period. Anyone who is on a deferred payment plan, has defaulted on a loan or been delinquent is not eligible.

Nate Cleveland, A07, says he'll apply to the program. He is a college advisor at a high school in Springfield, Mass. His job is funded through the Massachusetts Campus Compact, based at Tufts and part of a nationwide initiative aimed at increasing college enrollment and graduation rates among low-income high school students.

Cleveland estimates he has loans totaling around \$15,000. “It definitely increases the feasibility of this type of job. Right now, this is the kind of work I want to do.”

The goal of the new program is not to cover the entire debt for a small group but to help as many alumni as possible with a portion of their debts. With costs running \$46,680 a year for tuition, room and board, undergraduates who borrow—about half of current students—leave Tufts owing about \$14,400 in federal and private loans.

Debt for graduates of Tufts' medical, dental and veterinary schools runs even higher, ranging from about \$127,000 at the veterinary school to \$175,000 at the dental school and \$171,000 at the medical school. Friedman School graduates average \$39,900 in education debt.

Challenge to grow endowment nearly complete

FOR EVERY DOLLAR IN CASH DONATED TO THE FRIEDMAN School's endowment over the past five years, Tufts Trustee Emeritus Edward H. Budd, A55, has given 15 cents.

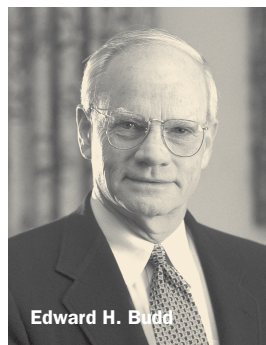
Those cents have added up.

When what is known as the Budd Challenge soon draws to a close, the Friedman School will have raised \$11.5 million for its endowment.

Budd, a member and former chair of the Board of Overseers to the Friedman School, issued his challenge in 2003. He pledged \$1.5 million if others would give \$10 million over the next five years to strengthen the school's endowment.

The significance of the Budd Challenge lies in its enduring impact on the school's health. A strong endowment is the bedrock of any institution, providing long-term strength to weather any challenges, address future opportunities and fund priorities like student financial aid.

Budd, retired chairman of the board and chief executive officer of the Travelers Corp., and his wife, Mary, have been strong supporters of Tufts and the Friedman School. They regularly give to the Tufts Nutrition Fund,



Edward H. Budd

and have endowed funds for undergraduate scholarships and for nutrition education and research.

He issued his challenge to "provide a stimulus to other donors and help jump-start this effort to build up the Friedman School's endowment," which he said is vital to "provide economic stability and also fund scholarships and research."

You can help bring the Budd Challenge to a successful conclusion. To participate, please contact Cindy Briggs Tobin, the Friedman School's director of development and alumni relations, at 617.636.0962 or by email at cindy.briggs@tufts.edu.



1: Miriam Nelson, N85, N87, director of the John Hancock Center for Physical Activity and Nutrition, and Alice Lichtenstein, the Stanley N. Gershoff Professor in Nutrition, joined Joan Rosenberg, N84, and other friends of the school at an event hosted by Lyn Whinston Perry, N83.

2: Tufts University trustee Alan Solomont, A70, A08P, Friedman School overseer Susan Solomont, G81, A08P, and Avram Goldberg attended a faculty talk at the home of overseer James Rabb.

3: Peter Walker, the Irwin H. Rosenberg Professor in Nutrition and Human Security, and Christina Economos, N96, the New Balance Chair in Childhood Nutrition, spoke on critical nutrition issues around the world. Pictured are Walker, Melinda Rabb, Economos and James Rabb.



Kathleen Merrigan is assistant professor and director of the Agriculture, Food and Environment Program at the Friedman School, and one of the nation's leading advocates for organic agriculture. Before joining the faculty, she oversaw national organic standards as administrator of a billion-dollar federal agency, the U.S. Department of Agriculture's Agricultural Marketing Service, and helped craft federal law on organic food production as a staff member on the U.S. Senate Agriculture Committee.

“People are reconnecting with how their food is produced....”

“They want to know where their food is coming from and whether it's healthy for their families.

“Everyone agrees our agricultural system needs to work better. At the Friedman School, we're working to find the answers. How do we educate consumers to make the best use of their food dollars? How do we produce the food we need, without destroying earth, water, or air? How do we distribute the world's food more fairly?

“Our goal is a safe food system that doesn't harm the environment, and ensures all people have access to healthy food.”

—Kathleen Merrigan, Ph.D.

Tufts
UNIVERSITY

Gerald J. and Dorothy R.
Friedman School of Nutrition
Science and Policy

Your gift to the Friedman School Annual Fund

supports nutrition research like Dr. Merrigan's and helps you to lead a healthier life. Please make a gift today!

Online: tufts.edu/givenow

Phone: 617-636-2940

Mail: Friedman School Annual Fund

136 Harrison Ave., Boston, MA 02111 Or use the envelope in this issue.

A call to action

THE FRIEDMAN SCHOOL ALUMNI ASSOCIATION WILL SOON ENTER ITS FIFTH official year of operation, and I am proud of—and amazed at—how much has been accomplished. Under the combined leadership of founding president Elizabeth Cochary Gross and past president Suzanne Dorfman, the Executive Council has grown to 28 representatives, including the various committee chairs, student reps and at-large members.

The Alumni Association's mission statement is "to develop and maintain a community of alumni and assist members of the community in achieving their professional and personal goals, as well as support the Friedman School's mission and objectives." Toward this effort, we have held numerous career panels; helped recruit new students to the school; and organized regional receptions, alumni/student networking nights and



MEET SAI, who earned her Ph.D. in human nutrition in 2002. She is currently a scientist in the Energy Metabolism Lab at the Jean Mayer USDA Human Nutrition Research Center on Aging and an assistant professor at the Friedman School.

hugely successful alumni weekends. Alumni annual fund participation has increased by more than 100 percent—a fine demonstration of Friedman School pride.

Moving forward, we would love for even more alumni to be involved. You can do so by attending or hosting an event; volunteering for the Alumni Executive Council; joining the alumni admissions ambassador program; or making a gift to the annual fund. Your investment in the school, in any capacity, is important!

Contact Sean Devendorf in the Office of Development and Alumni Relations at sean.devendorf@tufts.edu or 617.636.2949 for more information. The school's website, nutrition.tufts.edu, is a great resource for upcoming events, job opportunities in nutrition and alumni information. Please bookmark this site and visit it as often as you can. We look forward to seeing or hearing from you soon.

SAI KRUPA DAS, PH.D., N02
PRESIDENT, FRIEDMAN SCHOOL
ALUMNI ASSOCIATION

TRAVEL-LEARN

TRAVEL TO EXTRAORDINARY PLACES WITH EXCEPTIONAL PEOPLE

From Bora Bora to Norway, from Greece to Peru, our journeys feature intellectual inquiry with lectures and exploration. There's a perfect trip for every taste! Call Usha Sellers, Program Director, at 800-843-2586 for our brochure or visit our website for itineraries.

www.tufts.edu/alumni/ed-travel-learn.html

N85 Virginia Chomitz, N92, was quoted in a news release for the Healthy Children Task Force's Healthy Living Cambridge Kids program when it was chosen as a winner of the national Innovation in Prevention Award by the Department of Health and Human Services (HHS). The award, given for efforts in promoting healthy lifestyles in schools and communities, was presented during an awards luncheon in Washington, D.C. Chomitz is a senior scientist at the Institute for Community Health in Cambridge, Mass.

N88 Greg Auclair has joined Medtronic Inc., the medical device company, as a senior medical science liaison in its cardiovascular division.

N90 Bill Reid is director of HealthVault Platform Strategy, part of the health solutions group at Microsoft. This new initiative is a software and services platform aimed at helping people better manage their health information.

N93 Roberta Frechette published a cookbook, *Chez La Prez: Recipes from Wellesley College President's Kitchen*.

N97 Amy Myrdal has joined the faculty of "Healthy Kitchens, Healthy Lives," a continuing medical education conference held every spring and fall at the Culinary Institute of America's Napa Valley campus. Co-presented by Harvard Medical School's Osher Research Institute and the Culinary

Institute of America, the conference is designed to turn health professionals into role models of healthy eating and cooking for their patients, clients and families. The conference program includes plenary sessions, workshops and hands-on kitchen sessions. Myrdal teaches a culinary workshop on spices, herbs and aromatics in which she evaluates the science and media coverage of nutrition and health claims for these flavor enhancers. For more information on the conference, visit www.healthykitchens.org.

N98 Claire MacEvilly celebrated the birth of Tom Patrick Kitteringham in June 2007. Claire is the communications manager at the Medical Research Council Human Nutrition Research Centre in Cambridge, U.K.

N99 Jennifer Hollenstein is the author of *Understanding Dietary Supplements: A Handy Guide to the Evaluation and Use of Vitamins, Minerals, Herbs, Botanicals, and More* (University Press of Mississippi, May 2007).

N00 Kali Erickson was chosen by her undergraduate alma matter, Bowdoin College, to receive its "The Common Good Award" in recognition of her devotion to improving the lives of underserved populations in Latin America, South America and Africa through health programs and health education. She will accept this prestigious honor at the reunion convocation on May 31.

N01 Heather Schmitz and her husband, Patrick, announced the birth of their son, Buddy Albert Smith, on January 21. They live in Boulder, Colo., where Heather runs www.cocosshoppe.com, a concept boutique that focuses on eco-friendly, sustainable and fashionable clothing and merchandise.

N02 Dara Borto announced the birth of her daughter, Julie Olive Borto, on October 17, 2007.

Sai Krupa Das, the new president of the Friedman School Alumni Association, is a faculty member at the Friedman School and scientist at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA). She and her husband have a two-year-old daughter, Meera.

Ann McDermott writes: "I have five community-based pilot studies kicking off this April through June: three culinary projects for middle-schoolers, an exercise program for middle school girls and a social advocate program through an art project for Hispanic high-schoolers. Then, on top of that, 18 focus groups on weight/BMI/health concepts to be held across the country. Fun, but crazy!"

N03 Georgette Baghdady published her first paper in the *Stanford Social Innovation Review*. She co-authored a study titled "Marching to a Different Mission," which examined the history and transitions of the March of Dimes organization.

Karen Palmer married Maciej Wiczynski on October 20, 2007, in Great Barrington, Mass.

N04 Ph.D. candidate Josiemer Mattei and her husband, Raul, welcomed the arrival of their daughter, Madeline Gomila-Mattei, on December 21, 2007.

Shveta Taparua is an assistant research scientist at the Center for Environmental & Genetic Medicine, Institute of Biosciences and Technology, at Texas A&M University Health Science Center. Her work focuses on folate transport across the placenta and how folic acid exerts its protective effects against birth defects such as spina bifida, neural tube defects and congenital heart defects.

N05 Fanfan Han is pursuing a doctoral degree in China related to food safety, with a focus on policy and application.

N06 Charlotte Block has worked at the Mercy Corps headquarters in Portland, Ore., for the past three years. In her role as the assistant program officer, her portfolio covers three continents. She recently spent two weeks in Kosovo helping to put together its annual UNHCR proposal and also traveled to China for seven weeks to help with staff training and administrative support in the regional office.

N08 Jessica Cohen graduated in December 2007 and accepted a position with Abt Associates in Cambridge, Mass. She focuses on domestic health.

Live Fat, Die Old?

What's missing from the news on obesity and longevity by Miriam Nelson, Ph.D.

IN NOVEMBER 2007, THE *JOURNAL OF THE AMERICAN MEDICAL Association* published a provocative study by Katherine Flegal and others that showed how body mass index (BMI), a measurement of obesity using height and weight, is related to specific causes of death. Unsurprisingly, the results indicated that people who are obese have a higher risk of dying from cardiovascular disease and breast, colon, esophageal, uterine, ovarian, kidney and pancreatic cancers.

But the study also produced an unexpected result: it suggested that being overweight might actually *lower* your risk of dying from other causes, such as emphysema, Alzheimer's disease and pneumonia.

On the surface, this finding seems to weaken the case for maintaining a healthy weight and a healthy lifestyle. But we are just beginning to learn about the relationship between BMI and cause of death—we still have a long way to go before we understand it completely. In addition, we need to keep in mind that the research looked solely at death statistics. It did not give any information about the subjects' quality of life or the condition of their health before death.

To me, those are the most important issues. The purpose of leading a healthy lifestyle isn't simply to prolong your life. Rather, it is to prolong the years that you are able to lead a full, active life. And a lot of data shows that maintaining a healthy weight and a lifestyle full of physical activity and good nutrition does indeed ensure a high quality of life.

Consider the data on depression. More than 6 million Americans age 65 and older are depressed. The malady is so common among the elderly that some believe it is a normal

part of aging. Yet research suggests otherwise: instead, people often become depressed because of physical health problems.

We have evidence that keeping up a regular program of physical activity can play a



big role in staying depression-free. Some colleagues at Tufts examined the effects of a strength-training program on depression in older adults. Thirty-two subjects aged 60 or older who had been diagnosed with depression were randomly assigned to either an exercise group or a control group. The exercise group participated in strength-training

two or three days a week for 20 weeks. The control group attended a series of health education lectures for 10 weeks, but did not exercise regularly. After 20 weeks, the people in the exercise group showed significantly reduced depression: 73 percent of the exercisers were classified as non-depressed, compared with only 36 percent of the non-exercisers.

Other research demonstrates that staying active can help forestall physical limitations—the musculoskeletal and joint problems that make it harder to engage in daily activities such as climbing stairs, doing housework, or walking. In a study that followed 356 men and women aged 65 to 95 for six years, researchers found that those who walked often for exercise were nearly twice as likely to age without developing physical limitations.

Another study followed more than 5,000 people aged 70 years and older who already had physical limitations. Those who did a minimal amount of physical activity—the equivalent of walking at least one mile, one day per week—were 55 percent less likely to develop severe physical limitations, problems such as extreme muscle weakness or joint pain that could rob them of their physical independence entirely.

So while we still have a lot to learn about the aging process, we need to recognize that we have some important knowledge already. Specifically, we know that keeping up a healthy lifestyle is one of the best things we can do to make sure we age gracefully.

Miriam Nelson, N85, N87, an associate professor at the Friedman School, directs the John Hancock Center for Physical Activity and Nutrition at Tufts.

**Malnutrition contributes to more than 13,000
child deaths around the world every day.**



**You can play a role in alleviating this problem by including
the Friedman School in your will or estate plans.**

YOUR GIFT will help Friedman students and faculty continue to *improve the nutritional well-being of thousands of children worldwide* through research, community outreach, and academic programs. From projects in areas of crisis such as Sudan and Uganda to programs in the United States, people around the world benefit from Friedman School initiatives.

PLEASE LET US KNOW if you have chosen to support the Friedman School of Nutrition Science and Policy in your will so we can thank you and welcome you into the Charles Tufts Society. Making a planned gift through a bequest is an extraordinary commitment that demonstrates remarkable loyalty and generosity.

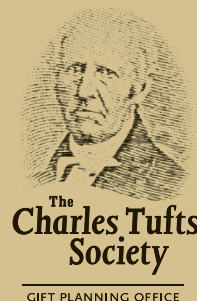


FIGURE FROM UNICEF.ORG AND UNICEF'S STATE OF THE WORLD'S CHILDREN 2008.



Gerald J. and Dorothy R.
Friedman School of
Nutrition Science and Policy

**For more information or to let us know about your gift intention, con-
tact the Gift Planning Office toll-free at 1-888-748-8387 or via email to
giftplanning@tufts.edu. Visit us online at www.tufts.edu/giftplanning.**



PHOTO: MELODY KO

IT'S LEARNING, DIG?

Schools nationwide are making room for gardens. When kids grow things, the theory goes, they are more likely to respect the environment and voluntarily eat a few peas and carrots. But there is a surprising lack of research to back up those intuitions. For more on the story, turn to page 18.



Tufts
UNIVERSITY

Gerald J. and Dorothy R.
Friedman School of
Nutrition Science and Policy

150 Harrison Avenue
Boston, MA 02111
<http://nutrition.tufts.edu>

NONPROFIT ORG.
U.S. POSTAGE

PAID

BOSTON, MA
PERMIT NO. 1161